

Registration form

Cockroach Control \$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

Print Name _____

I have read and understood the disclaimer notice found on page 4. Signature is required.
You can electronically sign with XXX

Signature _____

Address: _____

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

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

Fax (_____) _____ **Email** _____

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

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

Commercial Applicator _____ Residential Applicator _____ Industrial Applicator _____

Pesticide Handler _____ Agricultural Applicator _____ Adviser _____ Other _____

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

Technical Learning College PO Box 3060, Chino Valley, AZ 86323
Toll Free (866) 557-1746 Fax (928) 272-0747 E-Mail info@tlch2o.com

If you've paid on the Internet, please write your Customer# _____

Please pay with your credit card on our website under Bookstore or Buy Now. Or call us and provide your credit card information.

We will stop mailing the certificate of completion so we need either your fax number or e-mail address. We will e-mail the certificate to you, if no e-mail address; we will fax it to you.

DISCLAIMER NOTICE

I understand that it is my responsibility to ensure that this CEU course is either approved or accepted in my State for CEU credit. I understand State laws and rules change on a frequent basis and I believe this course is currently accepted in my State for CEU or contact hour credit, if it is not, I will not hold Technical Learning College responsible. I fully understand that this type of study program deals with dangerous, changing conditions and various laws and that I will not hold Technical Learning College, Technical Learning Consultants, Inc. (TLC) liable in any fashion for any errors, omissions, advice, suggestions or neglect contained in this CEU education training course or for any violation or injury, death, neglect, damage or loss of your license or certification caused in any fashion by this CEU education training or course material suggestion or error or my lack of submitting paperwork. It is my responsibility to call or contact TLC if I need help or assistance and double-check to ensure my registration page and assignment has been received and graded. It is my responsibility to ensure all information is correct and to abide with all rules and regulations.

State Approval Listing Link, check to see if your State accepts or has pre-approved this course. Not all States are listed. Not all courses are listed. If the course is not accepted for CEU credit, we will give you the course free if you ask your State to accept it for credit.

State Approval Listing URL...

<http://www.tlch2o.com/PDF/CEU%20State%20Approvals.pdf>

You can obtain a printed version of the course manual from TLC for an additional \$59.95 plus shipping charges.

AFFIDAVIT OF EXAM COMPLETION

I affirm that I personally completed the entire text of the course. I also affirm that I completed the exam without assistance from any outside source. I understand that it is my responsibility to file or maintain my certificate of completion as required by the state or by the designation organization.

Grading Information

In order to maintain the integrity of our courses we do not distribute test scores, percentages or questions missed. Our exams are based upon pass/fail criteria with the benchmark for successful completion set at 70%. Once you pass the exam, your record will reflect a successful completion and a certificate will be issued to you.

For security purposes, please fax or e-mail a copy of your driver's license and always call us to confirm we've received your assignment and to confirm your identity.

Thank you...

All downloads are electronically tracked and monitored for security purposes.

CUSTOMER SERVICE RESPONSE CARD

Cockroach Control Training Course

DATE: _____

NAME: _____

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?

6. How about the price of the course?

Poor _____ Fair _____ Average _____ Good _____ Great _____

7. How was your customer service?

Poor _____ Fair _____ Average _____ Good _____ Great _____

8. Any other concerns or comments.

Important Information about this Course (Disclaimer Notice)

This CEU course has been prepared to educate pesticide applicators and operators in general safety awareness of dealing with the often-complex and various pesticide treatment sprays, devices, methods, and applications. This course (manual) will cover general laws, regulations, required procedures and accepted policies relating to the use of pesticides and herbicides. It should be noted, however, that the regulation of pesticides and hazardous materials is an ongoing process and subject to change over time. For this reason, a list of resources is provided to assist in obtaining the most up-to-date information on various subjects. This manual is not a guidance document for applicators or operators who are involved with pesticides. It is not designed to meet the requirements of the United States Environmental Protection Agency or your local State environmental protection agency or health department. This course manual will provide general pesticide safety awareness and should not be used as a basis for pesticide treatment method/device guidance. This document is not a detailed pesticide informational manual or a source or remedy for poison control.

Technical Learning College or Technical Learning Consultants, Inc. makes no warranty, guarantee or representation as to the absolute correctness or appropriateness of the information in this manual and assumes no responsibility in connection with the implementation of this information. It cannot be assumed that this manual contains all measures and concepts required for specific conditions or circumstances. This document should be used for educational purposes only and is not considered a legal document. Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Confine chemicals to the property or plants being treated. Avoid drift onto neighboring properties, especially gardens containing fruits and/or vegetables ready to be picked. Dispose of empty containers carefully. Follow label instructions for disposal. Never reuse containers. Make sure empty containers are not accessible to children or animals. Never dispose of containers where they may contaminate water supplies or natural waterways. Do not pour down sink or toilet. Consult your county agricultural commissioner for correct ways of disposing of excess pesticides. You should never burn pesticide containers.

Individuals who are responsible for pesticide storage, mixing and application should obtain and comply with the most recent federal, state, and local regulations relevant to these sites and are urged to consult with the EPA and other appropriate federal, state and local agencies.

USE PESTICIDES WISELY: ALWAYS READ THE ENTIRE PESTICIDE LABEL CAREFULLY, FOLLOW ALL MIXING AND APPLICATION INSTRUCTIONS AND WEAR ALL RECOMMENDED PERSONAL PROTECTIVE GEAR AND CLOTHING. CONTACT YOUR STATE DEPARTMENT OF AGRICULTURE FOR ANY ADDITIONAL PESTICIDE USE REQUIREMENTS, RESTRICTIONS OR RECOMMENDATIONS.

NOTICE: MENTION OF PESTICIDE PRODUCTS IN THIS COURSE DOES NOT CONSTITUTE ENDORSEMENT OF ANY MATERIAL OR HERB OR HERBAL SUPPLEMENT. ALWAYS FOLLOW THE PRODUCT'S LABEL INSTRUCTIONS.

NOTICE

I understand that it is my responsibility to ensure that this CEU course is either approved or accepted in my State for CEU credit. I understand State laws and rules change on a frequent basis and I believe this course is currently accepted in my State for CEU or contact hour credit, if it is not, I will not hold Technical Learning College responsible. I also understand that this type of study program deals with dangerous conditions and that I will not hold Technical Learning College, Technical Learning Consultants, Inc. (TLC) liable for any errors or omissions or advice contained in this CEU education training course or for any violation or injury caused by this CEU education training course material. I will call or contact TLC if I need help or assistance and double-check to ensure my registration page and assignment has been received and graded.

Grading Information

In order to maintain the integrity of our courses we do not distribute test scores, percentages or questions missed. Our exams are based upon pass/fail criteria with the benchmark for successful completion set at 70%. Once you pass the exam, your record will reflect a successful completion and a certificate will be issued to you.

All downloads are electronically tracked and monitored for security purposes.

Cockroach Control Answer Key

Name _____

Phone# _____

You are solely responsible to ensure that this course is accepted for credit by your State. Did you check with your State agency to ensure this course is accepted for credit?

Method of Course acceptance confirmation. Please fill this section

Website __ Telephone Call __ Email __ Spoke to _____

Did you receive the approval number, if applicable? _____

What is the course approval number, if applicable? _____

You are responsible to ensure that TLC receives the Assignment and Registration Key. Please call us to ensure that we received it.

Multiple Choice. Pick only one answer per question. Exactly as in text. Circle or Mark off, Underline or Bold the answer. Please circle the number of the assignment version 1 or 2 or 3 or 4 or 5

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INSTRUCTIONS

1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.
2. You will need to pick one of the following five assignments to complete. This selection process is based upon your last name. If your last name begins with an A to E, you will pick assignment number 1, if your last name begins with the letter F to L, you are to complete assignment number 2 and if your last name begins with the letter M-P, you will pick assignment number 3 and if your last name begins with the letter Q-S, you will pick assignment number 4, and if your last name begins with the letter T-Z, you will pick assignment number 5.

Multiple Choice, please select one answer and mark it on the answer key. The answer must come from the course text. (s) Means answer can be plural or singular.

Assignment #1 for all pest applicators whose last name begins with A-E you will find your assignment on pages 9-33.

Assignment #2 for all pest applicators whose last name begins starting with the letter F-L, your assignment is found on pages 35-60.

Assignment #3 for all pest applicators whose last name begins starting with the letter M-P, your assignment is found on pages 61-86.

Assignment #4 for all pest applicators whose last name begins starting with the letter Q-S, your assignment is found on pages 87-111.

Assignment #5 for all pest applicators whose last name begins starting with the letter T-Z, your assignment is found on pages 113-137.

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.

2017 Changes to EPA's Farm Worker Protection Standard

In late 2015 the Environmental Protection Agency issued the long awaited revision to the Worker Protection Standard (WPS). This law it is now technically active and it will be enforced. Please keep in mind that the WPS covers both restricted use AND general use pesticides. This course is not for worker and/or handler training. Always follow the label and your State Pesticide Agency rules.

This course contains EPA's federal rule requirements. Please be aware that each state implements pesticide regulations that may be more stringent than EPA's regulations and these frequently are changed. Check with your state environmental/pesticide agency for more information.

When you are finished with your assignment; please complete the Registration page and the Customer Survey sheet. You can fax this information to us.

**Please fax the answer key to
TLC Western Campus Fax (928) 272-0747.**

Call us a couple hours after faxing to ensure that we received your paperwork.

All downloads are electronically tracked and monitored for security purposes.

Cockroach Control Assignment #1 For Students Names A-E

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 70 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 272-0747. This assignment is available to you in a Word Format on TLC's Website. You can find online assistance for this course on the in the Search function on Adobe Acrobat PDF to help find the answers. Once you have paid the course fee, you will be provided complete course support from Student Services (928) 468-0665.

Write your answers on the Answer Key found in the front of this assignment.

1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.
2. You will need to pick one of the following five assignments to complete. This selection process is based upon your last name. If your last name begins with an A to E, you will pick assignment number 1, if your last name begins with the letter F to L, you are to complete assignment number 2 and if your last name begins with the letter M-P, you will pick assignment number 3 and if your last name begins with the letter Q-S, you will pick assignment number 4, and if your last name begins with the letter T-Z, you will pick assignment number 5.

Multiple Choice, please select one answer and mark it on the answer key. The answer must come from the course text. (s) Means answer can be plural or singular.

Label Requirements

1. When these requirements appear on pesticide labels, all end-users must meet them unless exempt. Exempt end-users should voluntarily obey the requirements because of the dangers of

- _____.
- | | |
|---------------------------|----------------------|
| A. Pesticide exposure | D. Pesticide |
| B. Pesticide residues | E. Exempt end-users |
| C. Display of information | F. None of the Above |

2. _____ are intended to eliminate exposure to pesticides and to inform employees about the occupational hazards of pesticides. These require employers to make sure that employees are provided with:

- | | |
|---------------------------|-------------------------|
| A. Handler employer | D. Pesticide |
| B. Pesticide residues | E. Generic requirements |
| C. Display of information | F. None of the Above |

3. _____ at a central location (WPS safety poster, the location of emergency medical facilities, and a list of recent pesticide applications).

- | | |
|-------------------------|---------------------------|
| A. Instruction | D. Special application |
| B. Notice | E. Display of information |
| C. Generic requirements | F. None of the Above |

4. _____ exchanges between employers of agricultural workers and employers of commercial (for-hire) pesticide applicators.

- | | |
|---------------------------|---------------------------|
| A. Instruction | D. Special application |
| B. Details of information | E. Monitoring of handlers |
| C. Generic requirements | F. None of the Above |

5. _____ about pesticide applications and information about pesticides used.

- | | |
|-------------------------|---------------------------|
| A. Instruction | D. Special application |
| B. Notice | E. Monitoring of handlers |
| C. Generic requirements | F. None of the Above |

15. If you are a _____, you are responsible for providing your agricultural worker employees with the protections that the WPS requires for workers. (In the WPS itself, "worker employers" are called "agricultural employers.")

- A. Handler employer
- B. Crop Adviser
- C. Pesticide applicator
- D. Worker employer
- E. Exempt end-users
- F. None of the Above

Handler Employers:

Handler employers are people who:

16. Employ _____ (including members of their family), for any type of compensation, or

- A. Handler employer
- B. Pesticide handlers
- C. Crop Advisers
- D. Workers
- E. Exempt end-users
- F. None of the Above

17. If you are a handler employer, you are responsible for providing the _____ you employ with the protections that the WPS requires for handlers.

- A. Handler employer
- B. Pesticide workers
- C. Crop Advisers
- D. Pesticide handlers
- E. Exempt end-users
- F. None of the Above

If You Employ Supervisors

You must:

18. Require them to make sure the _____ they supervise comply with the WPS and receive its protections.

- A. Handler employees
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

19. Give them enough information and directions about the WPS requirements to make sure that the _____ they supervise receive the protections required by the WPS.

- A. Handler employees
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

20. Tell them who is responsible for all actions necessary for compliance with the WPS. Even if you assign _____ to carry out the duties required by the WPS, you are responsible for making sure that all those duties are performed.

- A. An employee
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

General Duties of WPS

The general duties of the WPS require an agricultural employer or a pesticide handler-employer to:

21. Assure that each _____ subject to the standard receives the required protections.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

22. Assure that _____ subject to the standard is used in a manner consistent with the labeling of the pesticide, including the requirements in the standard.

- A. Agricultural employer
- B. Person
- C. Any pesticide
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

23. Provide sufficient information and directions to _____ or handler to assure that each worker or handler receives the required protection. The information and directions must specify which persons are responsible for actions required to comply with the standard.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Each person who supervises any worker
- F. None of the Above

24. Require each person who supervises any worker or handler to assure compliance by the worker or handler with the provisions of this standard and to assure that the _____ receives the required protection (40 CFR).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

25. The general duties also prohibit _____ from taking any retaliatory actions against workers attempting to comply with this standard, or from taking any action that prevents or discourages any worker or handler from complying or attempting to comply with the WPS.

- A. Agricultural employer
- B. Person
- C. Agricultural and handler employers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

Labeling

26. Requires everyone applying pesticides to _____ on the pesticide container's label.

- A. Obey instructions printed
- B. Decontaminate supplies
- C. Find emergency assistance
- D. Safely apply pesticides
- E. Wear personal protective equipment as noted
- F. None of the Above

Summary of WPS Requirements

27. _____ -- Applicators are prohibited from applying a pesticide in a way that will expose workers or other persons. Workers are excluded from areas while pesticides are being applied.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Protection during applications
- E. Personal protective equipment
- F. None of the Above

28. _____ must be specified on all agricultural plant pesticide product labels. Workers are excluded from entering a pesticide-treated area during the restricted-entry interval, with only narrow exceptions.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

29. _____ must be provided and maintained for handlers and early-entry workers.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

30. _____ -- Workers must be notified about treated areas so they may avoid inadvertent exposures.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Notification to workers
 C. Emergency assistance F. None of the Above
31. _____ -- Handlers and workers must have an ample supply of water, soap, and towels for routine washing and emergency decontamination.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
32. _____ -- Transportation must be made available to a medical care facility if a worker or handler may have been poisoned or injured. Information must be provided about the pesticide to which the person may have been exposed.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
33. _____ Training is required for all workers and handlers, and a pesticide safety poster must be displayed.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
34. Access to labeling and site-specific information -- Handlers and workers must be informed of _____. Central posting of recent pesticide applications is required.
- A. Restricted-entry intervals D. Pesticide label requirements
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above

WHO DOES THE WPS PROTECT?

35. The WPS requires employers to take steps to protect two types of agricultural employees: _____.
- A. Worker and Agricultural employer D. Worker and/or handler
 B. Worker and Person E. Worker and Pesticide handler-employer
 C. Workers and Supervisors F. None of the Above
36. The terms “worker” and “pesticide handler” are defined very specifically in the WPS, and _____ who meet these definitions must comply with the WPS.
- A. Agricultural employer D. Worker and/or handler
 B. Employers of persons E. Pesticide handler-employer
 C. Workers F. None of the Above
37. Depending on the tasks being performed, you may need to provide the same _____ with worker protections on some occasions and pesticide handler protections on other occasions.
- A. Agricultural employer D. Worker and/or handler
 B. Person E. Pesticide handler-employer
 C. Employee F. None of the Above
38. _____ of agricultural establishments and members of their immediate family are exempt from many WPS requirements.
- A. Agricultural employer D. Worker and/or handler
 B. Person E. Pesticide handler-employer
 C. Workers F. None of the Above

WORKERS

39. A worker is anyone who: (1) is _____ for any type of compensation and (2) is doing tasks, such as harvesting, weeding, or watering, relating to the production of agricultural plants on a farm, forest, nursery, or greenhouse.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Employed (including self-employed)
- E. Pesticide handler-employer
- F. None of the Above

40. This term does not include persons who are employed by a commercial establishment to perform tasks as _____.

- A. Agricultural employer
- B. Crop advisors
- C. Workers
- D. Worker and/or handler
- E. Crop advisors
- F. None of the Above

PESTICIDE HANDLERS

41. A pesticide handler is anyone who: is employed (including self-employed) for any type of compensation by _____ or a commercial pesticide handling establishment that uses pesticides in the production of agricultural plants on a farm, forest, nursery, or greenhouse.

- A. Product labeling
- B. Use of soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

And is doing any of the following tasks:

42. Assisting with the _____, including incorporating the pesticide into the soil after the application has occurred.

- A. Product labeling
- B. Soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

43. Entering a greenhouse or other enclosed area after application and before the inhalation exposure level listed on the product labeling has been reached or one of the WPS ventilation criteria have been met to: – operate ventilation equipment, – _____, such as tarps, used in fumigation, or – check air concentration levels.

- A. Product labeling
- B. Adjust or remove coverings
- C. Restricted-entry interval
- D. Entering an agricultural establishment
- E. Application of pesticides
- F. None of the Above

44. Entering a treated area outdoors after _____ to adjust or remove soil coverings, such as tarpaulins.

- A. Product labeling
- B. Application of any soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

45. Performing tasks as a crop advisor: – during any pesticide application, – before any inhalation exposure level or ventilation criteria listed in the labeling has been reached or one of the WPS ventilation criteria has been met, – _____.

- A. Product labeling
- B. Soil fumigant
- C. During any restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

NOT A HANDLER

46. A person is not a _____ if he or she only handles pesticide containers that have been emptied or cleaned according to instructions on pesticide product labeling or, if the labeling has no such instructions, have been triple-rinsed or cleaned by an equivalent method, such as pressure rinsing.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

47. A person is not a _____ if he or she (1) is only handling pesticide containers that are unopened and (2) is not, at the same time, also doing any handling task (such as mixing or loading).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

48. You are not a _____ if you: purchase pesticides and transport them unopened to an establishment. Carry unopened containers into a pesticide storage facility. Transport unopened containers to the site where they are to be mixed, loaded, or applied.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

49. You are a _____ if you are loading unopened water-soluble packets into a mixing tank (because you are mixing and loading the pesticide).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

Four Basic Requirements of WPS

These regulations contain four basic requirements:

50. Workers are _____.
- A. Not allowed to drink pesticide(s)
 - B. To wear PPE
 - C. Allowed to preform handling activities
 - D. Not allowed in the restricted entry intervals (REI)
 - E. Not to be sprayed with pesticides
 - F. None of the Above

Brownbanded Cockroach

51. Both nymphs and adults of this species are _____ and can be distinguished easily by the presence of two angled or transverse bands across the base of the wings and abdomen.

- A. Black
- B. Red
- C. Light brown
- D. Internode
- E. Detritivore
- F. None of the Above

52. Adult males are 1/2 to 5/8 inch long; the female is slightly shorter. Though both have wings, only the _____ can fly.

- A. Male
- B. Female
- C. TV roaches
- D. Nymphs and adults
- E. Instars
- F. None of the Above

53. The _____ carries each egg capsule for only a day or two before attaching it to a protected surface.

- A. Adult males
- B. Female
- C. Ovipositor
- D. Dealates
- E. Phytotoxemia
- F. None of the Above

54. The egg capsules are usually _____, and most of the eggs hatch within 50 days.

- A. Diapause
- B. Cursorial
- C. Scutellum
- D. Deposited in clusters or rows
- E. Deposited in frass
- F. None of the Above

55. Approximately 5 to 18 egg capsules are produced per female, each containing 19 eggs. About 3 to 9 months are required to complete the _____.

- A. Diapause
- B. Estivation
- C. Metamorphosis
- D. Defoliate, defoliation
- E. Reproductive cycle
- F. None of the Above

56. _____ prefer a dry, warm environment. They are generally found on ceilings, high on walls, and in light switches, closets and furniture. In some places they are known as "TV roaches" because of their frequent presence in living-room furniture and appliances.

- A. Adult males
- B. Female
- C. TV roaches
- D. Nymphs and adults
- E. Reproductives
- F. None of the Above

57. The wings of _____ cover their abdomens, while the females' wings are shorter. The yellow bands across the back are more pronounced on nymphs than on adults.

- A. Adult males
- B. Female
- C. Ovipositor
- D. Nymphs and adults
- E. Dealates
- F. None of the Above

58. These cockroaches are quite active, and the adults, especially the males, fly rapidly when disturbed. Both _____ may jump to escape danger.

- A. Adult males
- B. Female
- C. Dealates
- D. Adults and nymphs
- E. Reproductives
- F. None of the Above

59. The _____ carries her egg capsule for only a day or two before gluing it to a protected surface underneath or inside furniture, in a closet or on the ceiling in a darkened room. They can also be found in televisions and other appliances.

- A. Adult female
- B. Detritivores
- C. Pedipalps
- D. Nymphs and adults
- E. Dealates
- F. None of the Above

60. Brownbanded cockroaches are more apt to be found in homes, apartments, hotels, motels, nursing homes and hospitals than in restaurants, grocery stores and other commercial establishments. They prefer starchy foods and appear to have lower water requirements than _____.

- A. American Cockroaches
- B. German cockroaches
- C. TV roaches
- D. Nymphs and adults
- E. Other cockroaches
- F. None of the Above

61. They can occupy drier locations within a building. _____ frequently are found on ceilings in dark or dimly lit rooms, behind picture frames, in light switches, in upper walls of cabinets and closets, or on undersides of furniture and inside upholstered furniture. Because brownbanded cockroaches are found in so many locations they may be more difficult to control.

- A. American Cockroaches
- B. German cockroaches
- C. TV roaches
- D. Nymphs and adults
- E. Other cockroaches
- F. None of the Above

American Cockroach (*Periplaneta americana*)

62. The American cockroach is the largest of the common species, growing to a length of 1 1/2 to 2 inches. It is reddish-brown with a light yellow band around the edge of the _____.

- A. Petiole
- B. Proboscis
- C. Head shield
- D. Exoskeleton
- E. Crepuscular
- F. None of the Above

63. Adults of both sexes have _____, but seldom fly. They are, however, capable of gliding flights.

- A. Pedipalps
- B. Forbs
- C. Imagoes
- D. Well-developed wings
- E. Pronotums
- F. None of the Above

64. _____ are smaller than adults, grayish-brown in color and less fully winged.

- A. Instars
- B. Female
- C. Imagoes
- D. Nymphs and adults
- E. Nymphal cockroaches
- F. None of the Above

65. The adult female usually drops her egg capsule within a day after it is formed. She often places the capsule near a food or water source or in a location where it can be covered with _____.

- A. Frass
- B. Endosperm
- C. Capsule
- D. Miscellaneous debris
- E. Poikilotherm
- F. None of the Above

66. Occasionally, she glues the capsule to some surface with secretions from her mouth. The capsule may be _____ in moist wood, in cracks in bark or in whorls of plants.

- A. Ovipositor
- B. Diapause
- C. Capsule
- D. Overwinter
- E. Deposited outdoors
- F. None of the Above

American Cockroach

67. _____ of this species are 1 1/2 to 2 inches long. They are the largest of all the cockroaches common in the World.

- A. Adult males
- B. Female
- C. Instars
- D. Adults
- E. Nymphal cockroaches
- F. None of the Above

68. Both _____ are shiny, reddish brown with a pale brown or yellow band around the edge of the head and back. The wings of both the male and female extend slightly beyond the body.

- A. Adult males
- B. Female
- C. Instars
- D. Nymphs and adults
- E. Male and female
- F. None of the Above

69. The female produces 15 to 90 egg capsules, each containing 14 to 16 eggs. Egg capsules are deposited near a _____ where the majority of eggs hatch within 60 days.

- A. Dactyl
- B. Internode
- C. Capsule
- D. Endosperm
- E. Scutellum
- F. None of the Above

70. The _____ is completed in 12 to 18 months.

- A. Overwinter
- B. Dealate
- C. Overwinter
- D. Defoliate, defoliation
- E. Reproductive cycle
- F. None of the Above

Oriental Cockroach

71. The _____ carries an egg capsule for about 30 hours and then drops or attaches it to a protected surface near food. On average, a female produces eight egg capsules, each containing 16 eggs which hatch within 60 days.

- A. Dealates
- B. Nymphs
- C. Roach
- D. Reproductives
- E. Female
- F. None of the Above

72. The _____ of this roach is completed in 6 to 9 months.

- A. Egg capsule
- B. Mating
- C. Completion
- D. Reproductive cycle
- E. Life cycle
- F. None of the Above

73. _____ prefer damp, cool, dark areas. They are generally found in sewer drains, crawl space areas, basements, cellars, or on the first floor of buildings.

- A. Nymphs
- B. Roaches
- C. Water bugs
- D. Dealates
- E. Adult males
- F. None of the Above

74. Infestations by this roach are most frequently found during spring (_____) and fall (October). They may spend considerable time outdoors during warm weather.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

Wood Cockroach

75. This group of roaches causes occasional problems in homes and public places. They are seen in late _____, especially after rains.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

76. This roach is often confused with both adult American and _____. However, the wood roach is chestnut brown and has a dull white band around the edges of the head and back.

- A. Females
- B. Roaches
- C. Adults
- D. Oriental roaches
- E. One generation per year
- F. None of the Above

77. Adults are 1 to 1 1/4 inches long. _____ have wings covering only about half the body and do not fly. Males have wings longer than the body and are excellent fliers.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Instars
- F. None of the Above

78. Females produce about 30 egg capsules, each containing about 32 to 36 eggs. This roach completes _____.

- A. Her work
- B. Nymph stage
- C. Egg laying
- D. The life cycle
- E. One generation per year
- F. None of the Above

79. Wood cockroaches are usually found in wood piles, hollow trees or under loose bark. Buildings in wooded areas are prone to have problems with wood roaches during rainy periods. Although this roach prefers to live outside, _____ are attracted to light and may enter buildings. They are sometimes brought in along with firewood, but do not usually survive or multiply inside buildings.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Dealates
- F. None of the Above

80. The _____ is slightly more than 1 inch long and is a uniform, very dark brown to black. The head shield is a solid dark color.

- A. Females
- B. Roaches
- C. Adult
- D. Adult males
- E. Nymphs
- F. None of the Above

81. Both _____ have wings longer than their bodies and are capable of flying or gliding.

- A. Dealates and Instars
- B. Roaches
- C. Adults and Instars
- D. Nymphs and Adults
- E. Males and females
- F. None of the Above

82. Nymphs are smaller than adults and have only partially developed wings. _____ usually carry their egg capsules for a day or two before attaching them to the outside surfaces of buildings and other protected sites near the ground.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Adult females
- F. None of the Above

83. These _____ live primarily outdoors and prefer wood, leaf litter, trash piles and other humid sites with abundant organic matter. They also hide under rocks, ground cover and building materials. They may enter homes with infested firewood during seasonal migrations.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Cockroaches
- F. None of the Above

Habitat

84. The Smokybrown cockroach has a great tendency to lose moisture through the cuticle and thus requires water every two to three days. These requirements are important to remember when implementing your _____.

- A. Treatment
- B. Monitoring
- C. Penetration
- D. Control program
- E. Roach extermination program
- F. None of the Above

85. This pest is most likely found in areas which are protected, moist, dark, relatively warm and free from the _____. In nature, tree holes and the canopies of palm trees offer the ideal environment in which this bug can thrive.

- A. Pesticide
- B. Dry habitat
- C. Deep penetration
- D. Desiccating effects of air flow
- E. Treatment
- F. None of the Above

Control Smokybrown Cockroaches

86. Eliminate or alter any conditions which encourage the _____ of the roaches. These pests thrive in dark, humid areas which have little or no air flow.

- A. Life cycle
- B. Moist habitat
- C. Deeper penetration
- D. Presence and/or reproduction
- E. Removal and destroying hiding areas
- F. None of the Above

87. Spray exterior of structure with Suspend SC, Demon WP or Cynoff WP. These odorless insecticides will give a quick knockdown of bugs while lasting for several weeks, usually yielding about a _____.

- A. 90 day residual
- B. 10 day residual
- C. 1 inch penetration
- D. 30 day residual
- E. 50 day residual
- F. None of the Above

88. Spray any crack, crevice or entry point on the outside of the structure. This includes treating around all windows, doors, vents and in _____ of brick veneer. Also spray tree trunks, from ground to crotch of tree, but no higher than six feet.

- A. Areas
- B. Weep holes
- C. Deep penetration
- D. Areas roaches like to hide
- E. And outside
- F. None of the Above

89. All _____ should be sprayed with insecticide. These exterior surfaces should be treated 3 to 4 times each year.

- A. Interiors
- B. Moist habitats
- C. Mulched areas
- D. Grass and bushes
- E. Roaches
- F. None of the Above

90. If necessary, _____ in the following areas: basements, garages, carports, attics, closets, laundry rooms.

- A. Trap
- B. B and G
- C. C/C
- D. Dust
- E. Spray indoors
- F. None of the Above

91. Also treat beneath and behind large appliances (refrigerators, stoves, etc.) or other areas where these _____. (Spraying all of your baseboards with any bug spray is not necessary!)

- A. Thrive in the dark
- B. Have a moist habitat
- C. Penetrate
- D. Pests live
- E. Roaches prefer to hide
- F. None of the Above

92. Indoor areas should be treated _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. 2 to 3 times per year
- E. 1 to 2 times per year
- F. None of the Above

93. Hollow blocks or other areas such as behind brick walls and along plumbing lines should be treated with _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

94. Although many dusts will kill roaches, _____ is water-proof and will not be destroyed by the moist habitat of the Smokybrown as would other dusts.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

95. For deeper penetration and better distribution of insecticide dust, use a _____. Delta Dust should be used once each year or as needed.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

Asian Cockroach *Blattella asahinai*

96. The Asian cockroach was identified as a _____ to the United States in 1986 when a professional pest control operator collected these insects in Lakeland, Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. Newly introduced species
- F. None of the Above

97. He referred to them as German cockroaches, *Blattella germanica* (L.), but noted that their behavior was unlike any other _____ that he had previously encountered. Upon further investigation the cockroaches were found to be *B. asahinai*, Asian cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

Distribution and Habits

98. The Asian cockroach was first described in 1981 from insects collected on Okinawa Island, Japan. It is most likely that _____ was introduced into the United States through imports from Japan.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. *B. asahinai*
- E. Wood cockroach(es)
- F. None of the Above

99. Since the first identification of _____ in Lakeland (Polk County), it has been reported from Marion County in central Florida to Broward County in southwest Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. *B. asahinai*
- F. None of the Above

100. The primary habitat of the _____ is outdoors in shaded mulched or composted areas, such as landscaping and gardens, where fresh plant litter accumulates.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Water bug
- E. Wood cockroach(es)
- F. None of the Above

101. Populations of 30,000 to 250,000 insects per acre have been reported. Members of this species are strong fliers, unlike their close relative, the _____.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Polish cockroach
- E. Wood cockroach(es)
- F. None of the Above

102. They may invade structures but indoor infestations are rare occurrences. They become _____ and are attracted to light-colored surfaces and brightly lit areas.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Male tergal glands
- E. Indoor infestations
- F. None of the Above

103. _____ will take flight during the day if disturbed. The presence of this pest is obvious since their peak activity period coincides with our leisure time.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Males
- E. Indoor infestations
- F. None of the Above

Description

104. _____ are almost identical to German cockroaches. Chemical analysis by gas chromatography will confirm the species.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Wood cockroach(es)
- E. Indoor infestations
- F. None of the Above

105. However, there are also slight morphological differences between *B. asahinai* and *B. germanica*. _____ adults have longer and narrower wings than those of German cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Black
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

106. There are also differences between _____ in the shape of the male tergal glands.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Female tergal glands
- E. The species
- F. None of the Above

107. Asian cockroach females produce _____ and nymphs are smaller than that of German cockroaches.

- A. Females
- B. Roaches
- C. Adults
- D. Smaller egg capsules
- E. Wings
- F. None of the Above

108. Asian cockroach first instars have 23 antennal segments while German cockroach first instars have 24 to 25. Finally, margins of the abdomen and spots along the abdominal midsection of *B. asahinai* late instars _____, whereas those areas are lightly pigmented in *B. germanica*.

- A. Appear red
- B. Appear white
- C. Appear black
- D. Are small
- E. Are large
- F. None of the Above

Life Cycle

109. Female Asian cockroaches have a lifetime reproductive potential for producing approximately four egg capsules, each averaging _____.

- A. 137 nymphs
- B. 100 nymphs
- C. 37 nymphs
- D. 3700 nymphs
- E. 370 nymphs
- F. None of the Above

110. Immatures take approximately 67 days to reach adulthood. Females can then live for 104 days and males can live for _____.

- A. 49 days
- B. 49 weeks
- C. 49 years
- D. 149 days
- E. 490 days
- F. None of the Above

111. Females can produce their first egg capsule _____ after adult eclosion, and can drop another 20 days later.

- A. 23 days
- B. 33 days
- C. 3 days
- D. 10 days
- E. 13 days
- F. None of the Above

112. Adults are abundant _____ and again August through September. Nymphs predominate May through August.
- A. March to June
 - B. June and July
 - C. February through May
 - D. April and May
 - E. May or June
 - F. None of the Above

Management

113. _____ of Asian cockroaches is difficult due to their mobility and abundance of population sites.

- A. Typically treatment
- B. Control
- C. Tracking
- D. Management
- E. Numerous infestations
- F. None of the Above

114. Traditional treatments using _____ inside and around the perimeter of a structure are ineffective due to numerous infestations in mulched and wooded areas.

- A. Traps
- B. Control
- C. Dusts
- D. B and G
- E. Residual sprays
- F. None of the Above

115. Plus, adults enter homes through windows and doorways, avoiding areas typically treated for _____ of German cockroaches.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Numerous infestations
- F. None of the Above

116. Sodium vapor lamps for security lighting and yellow incandescent bulbs for porch lighting are both less attractive to adults and would thereby _____ of adult insects to lighting near buildings.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Reduce attraction
- F. None of the Above

117. Although Asian cockroaches are susceptible to all pesticides, toxic pelletized baits scattered outdoors have _____.

- A. Typically been treated
- B. Been controlled
- C. Been susceptible
- D. Are less attracted
- E. Provided the most reliable control
- F. None of the Above

118. The _____ for a pesticide or herbicide to enter the body are: inhalation, skin and eye contact, ingestion, and injection.

- A. Prevention techniques
- B. Basic cycle
- C. Basic routes
- D. Direction
- E. Methods
- F. None of the Above

119. The prevention of entry by one of these routes can be accomplished by control mechanisms such as engineering controls, personal protective equipment, and _____.

- A. Prevention
- B. Basic routes
- C. Safety
- D. Can be minimized
- E. Administrative controls
- F. None of the Above

120. Each route can be minimized by a variety of _____ depending on the hazard and operation.

- A. Prevention methods
- B. Basic routes
- C. Control measures
- D. Techniques
- E. Administrative controls
- F. None of the Above

Madagascar Giant Hissing Roaches

121. The cockroach family, to which Madagascar roaches belong, is among the most primitive of the winged insects. The nearest relatives to _____ include mantids, grass-hoppers, stick insects, and termites.

- A. Bees
- B. Cockroaches
- C. Winged insects
- D. Beetles
- E. Bed bugs
- F. None of the Above

122. There are at least 3,500 known species living today, in _____, most of which originate in the tropics.

- A. 500 genera
- B. 450 genera
- C. 400 genera
- D. On this planet
- E. USA
- F. None of the Above

123. As a group, cockroaches exhibit a _____ of sizes, colors, and habits.

- A. Diurnal
- B. Small diversity
- C. Commensally
- D. Wide diversity
- E. Cornucopia
- F. None of the Above

124. Although they have an infamous reputation as household pests, in reality only about half a dozen species (less than one percent of all known forms) have _____ with humans.

- A. Diurnal skills
- B. Exhibited hostility
- C. Made friends
- D. Negative associations
- E. Toxic relationships
- F. None of the Above

125. Many species are diurnal, some are _____, and others live in the ground or are wood-boring. Some, such as the Madagascar roach, do not have wings.

- A. Intellectual
- B. Semiaquatic
- C. Hostile
- D. Scavengers
- E. Toxic
- F. None of the Above

126. About a dozen or so species live _____ in the nests of ants, wasps, or termites.

- A. Diurnal
- B. Near and
- C. Commensally
- D. As scavengers outdoors near
- E. As friends
- F. None of the Above

127. There are also roach species that inhabit caves with bats or live in the desert. The majority of cockroaches in tropical countries exist as scavengers outdoors, feeding on vegetation and organic matter in _____.

- A. Their nests
- B. The tropics
- C. Dry areas
- D. Outdoors
- E. An apparently harmless fashion
- F. None of the Above

128. The toxicity of the Thailand and Middle-Asian cobra venoms as well as of their isolated components (_____ and some others) for cockroach *Gromphadorhina portentosa* was studied.

- A. Poisons
- B. Sugars
- C. Vapors
- D. Neurotoxins, cytotoxins, phospholipases
- E. Toxic
- F. None of the Above

129. It was found that, as compared to mammals, cockroaches are _____ to cobra venoms and their components.
- A. Diurnal
 - B. More resistant
 - C. Related
 - D. Scavengers
 - E. Toxic
 - F. None of the Above

Cockroach Management Strategies

Prevention

130. _____ of roach colonies can be prevented by close inspection of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.

- A. Entry and establishment
- B. Elimination
- C. Should not be left
- D. Avoid unnecessary control
- E. Developed resistance
- F. None of the Above

131. Caulking or puttying areas such as cracks and crevices around kitchen cabinets, bathtubs, water and plumbing pipes, cracks on floors and walls, and exterior windows and doors can eliminate most hiding places and _____.

- A. Cannot elevate growth
- B. Can eliminate
- C. Should not be left
- D. Help reduce the cockroach population
- E. Helps develop resistance
- F. None of the Above

132. Other structural modifications, such as weather stripping and pipe collars, also help to _____.

- A. Increase protection
- B. Can eliminate
- C. Kill the pests
- D. Avoid unnecessary growth
- E. Reduce cockroach entry and establishment
- F. None of the Above

Sanitation

133. Good housekeeping is the most important factor in preventing and _____.

- A. Cannot forgotten
- B. Elimination
- C. Should not be left
- D. Controlling cockroach populations
- E. Reducing resistance
- F. None of the Above

134. Cockroaches _____, water and shelter. Do not allow food particles to remain on shelves or floors.

- A. Cannot live without food
- B. Can eliminate
- C. Storage areas should not be left
- D. Avoid unnecessary food stuffs
- E. Have developed resistance
- F. None of the Above

135. Dishes should not be left unwashed after a meal, particularly overnight. Clean areas under refrigerators, stoves, sinks and furniture regularly to remove bits of food that have accumulated. If pets are fed indoors, _____, especially overnight. Store pet food in tight containers, and clean litter boxes frequently.

- A. Use baits
- B. Use dusts
- C. Should not be left
- D. Avoid unnecessary food
- E. Teach pets to deal with the cockroaches
- F. None of the Above

136. Keep all food items covered or in a refrigerator at all times between uses. Empty garbage and _____ and keep refuse in a covered container away from the residence.

- A. Burn it
- B. Eliminate extra humans
- C. Should not be left
- D. Avoid unnecessary
- E. Develop control methods
- F. None of the Above

137. If possible, _____. Common sources include leaking faucets and pipes, drains, toilet tanks, wash basins and sink traps, aquaria and water-filled tubs. Pets' water dishes, beverage bottles or cartons, and pipe condensation can provide an adequate water supply for roaches. Roach breeding is encouraged by clutter.

- A. Move
- B. Use dusts
- C. Call pest control
- D. Avoid unnecessary outdoor activities
- E. Use DDT
- F. None of the Above

138. Avoid unnecessary storage of corrugated paper boxes, piles of paper bags, newspaper, magazines, and _____.

- A. Concrete
- B. Beer
- C. Boric acid
- D. Metal
- E. Motor oil
- F. None of the Above

Chemical Control

139. Cockroaches have been the target of many insecticides over the years but they have _____ to several of them.

- A. Cannot escape
- B. Eliminated
- C. Evolved
- D. Learned to avoid eating
- E. Developed resistance
- F. None of the Above

140. Attempts to use pheromones as sex lures or to sterilize male cockroaches have thus far not _____ on a large scale.

- A. Proved practical
- B. Worked
- C. Impressed
- D. Proved cost effective
- E. Developed resistance
- F. None of the Above

141. _____ such as diatomaceous earth to penetrate their protective cuticles may work in individual households as a nonpoisonous alternative.

- A. Dusts
- B. Salts
- C. Sprinkling abrasives
- D. Avoid unnecessary dusting
- E. Spraying pesticides
- F. None of the Above

142. Once the cuticle is abraded, the roaches die of dehydration. Also effective is _____, which is both abrasive and poisonous to cockroaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Boric acid powder
- F. None of the Above

143. _____ cockroaches from multiplying is to keep a clean house and block their access to water, which they need to survive.

- A. Crack and crevice or C/C
- B. Drione Dust will control
- C. Application of pesticide to
- D. The best way to prevent
- E. Crusader Hand Dust will kill
- F. None of the Above

144. American cockroaches are very easy to keep and rear in the laboratory and make excellent subjects for experimentation because of their large size and _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Treatment Methods

145. The disadvantage is that the treatments need to be where the roaches are hiding. Cockroaches have been seen thriving less than a foot away from _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. A treated surface
- F. None of the Above

146. Their path of feeding and moving to and from shelter never crossed the _____. This enabled them to live virtually on top of treated areas and yet still survive.

- A. Crack and crevice or C/C
- B. Treated surfaces
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Cracks and Crevice

147. When roaches began to build resistance to chemicals and manufacturers designed their products with less volatility, new packaging and treatment techniques became necessary. These new trends became known as "_____".

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

148. Basically, _____ means applying the chemical into the cracks and crevices suspected of harboring roaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

149. There are two types of products commonly used for this purpose: _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

150. In fact, a good pest control technician should be able to get roach control with nothing more than _____ if he or she knows where to do the application.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust
- E. Crusader Hand Duster
- F. None of the Above

151. _____ has solved many roach problems. Apply it in cracks and crevices, behind cabinets and major appliances, in wall voids and electric outlets.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

152. This requires a lot of work and this product can be messy to work with, but provides the _____ when used properly.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

153. Use a _____ for the application. Since dust can be messy to work with, aerosol products became popular throughout the 1980's.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

154. The professional line of products which is discussed are truly effective and not commonly available. Their _____ are effective because insects have not been able to build resistance.

- A. Crack and crevice or C/C
- B. Active ingredients
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

155. There are several stories of super roaches and the fact that "even the bugman" couldn't get rid of "my" roaches, but what it all boils down to is the _____ and the choice of product. If the products used are the ones as mentioned above and the treatment is thorough and complete, there is little chance of any roach surviving nor of re-infestation.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

156. Most insects, certainly roaches, cannot live where _____ has been applied. That being said, all you need to do is apply it wherever roaches want to be. This process of eliminating their nest sights eliminates their population.

- A. Crack and crevice or C/C
- B. Drione
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

157. The reason they appear to be "resistant" in most cases is that they are simply avoiding treated areas. This can happen when products are mixed at higher rates or when applicators fall victim to treating the same areas over and over again. The roaches which survive all these _____ are the ones which are going where the applicator has failed to treat.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Applications
- F. None of the Above

158. Today, these problems have been all but eliminated with the _____. These new methods are both safer and easier to do.

- A. Crack and crevice or C/C
- B. Latest treating methods
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

159. Although _____ has long been the main method to get roach control, baiting has become a legitimate method as new baits hit the market. These products have been tested and proven effective.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Spraying
- F. None of the Above

Residual Sprays

160. These formulations are oil-based or water-based emulsions and water-based suspensions (_____). They are available in ready-to-use pressurized containers or non-pressurized containers with built-in spray pumps.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

161. _____ also can be purchased as concentrates to mix with water before applying with a compressed-air sprayer, plunger-type sprayer or paint brush.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

162. Be careful when using _____; they may stain, dull or damage certain floor tiles, linoleum, painted surfaces, plaster, plastics, houseplants, carpets and carpet backing.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

163. _____ can create a fire hazard when used near an open flame (pilot lights, gas stoves, furnaces). Water emulsions may stain wallpaper, light-colored carpets, draperies or other materials.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

164. They can short out electrical circuits, and are inferior to _____ on impervious surfaces such as glass or metal.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

165. _____ must be frequently agitated in the spray tank, but they leave the most active residues, especially on porous surfaces such as unpainted wood, mortar or concrete block.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

166. _____ are generally easy and fast to apply. The spray should wet or dampen the treated surface; do not allow spray to puddle or run off. When treating for cockroaches, pay particular attention to cracks and crevices. Exposed surfaces, especially those used to prepare foods, should usually not be treated with sprays.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

Dusts

167. _____ sometimes suffices as the only treatment for cockroaches, but is most often a supplemental treatment.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Insecticide dust
- F. None of the Above

168. _____ generally have longer residual action than sprays, but are ineffective if they become damp.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

169. Dusts are useful in cockroach control because they can be placed deep in cracks, crevices and wall voids; under refrigerators and furniture; around pipes, tunnels and conduits; on very smooth or very rough surfaces; and in other places not treatable with _____.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Other formulations
- F. None of the Above

170. Do not use dusts for treating large surfaces because they leave unsightly deposits. Also, cockroaches avoid _____ and will not walk through thick layers of the material.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Heavy deposits F. None of the Above

171. Use light pressure on the application device to minimize the amount of dust in living areas. Apply _____ as light, even residues that are barely visible.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Dusts F. None of the Above

Baits

172. Several cockroach _____ are sold in ready-to use containers. They also can be made using a combination of food attractants and a toxicant. If cockroaches will not feed on the bait, the insecticide has no effect.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Dusts F. None of the Above

173. Thus, it is important not to contaminate stored _____ with organic solvents, other insecticides, fungicides and fertilizers.

A. Residual sprays D. Oil-based
B. Wettable powders E. Bait
C. Dusts F. None of the Above

174. Baits are usually long lasting and often work well in areas that cannot be effectively sprayed or dusted. _____ are often most useful when used in conjunction with a residual spray or dust.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Dusts F. None of the Above

175. _____ give best results in buildings where there are few alternative food supplies.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Dusts F. None of the Above

176. Always use a sufficient number of _____ to adequately treat an area where cockroaches are to be controlled. Examine the bait containers frequently to ensure they remain fresh and the bait is not depleted.

A. Residual sprays D. Bait containers
B. Wettable powders E. Baits
C. Dusts F. None of the Above

177. Baits have always been available, but roaches seemed to be indifferent to them. Although some roaches would feed and die, it was not likely that you would be able to _____ with baits alone. Now, we have products like Maxforce and Avert. These materials are deadly for roaches.

A. Residual sprays D. Control infestations
B. Wettable powders E. Baits
C. Dusts F. None of the Above

178. If you spray several properties or apartments and intend on doing a lot of baiting you should consider getting the _____ . It uses the same Maxforce Gel in smaller cartridges which are loaded in the gun allowing for precise controlled applications and placements.

- A. Maxforce Bait Gun
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

179. They have been formulated with attractants which roaches cannot resist. You should be able to get complete control in homes, apartments and townhouses without having to do any _____ . The advantage of these products is that you are able to apply them with a minimum of preparation.

- A. Spraying
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

180. If you are careful, you should be able to apply Maxforce without having to remove anything from cabinets. _____ comes in an aerosol can which enables you to deliver the bait deep in wall voids where the roaches are hiding. The amazing thing about these products is that roaches love them to death.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

181. In fact, roaches will ignore bait placements that have been made over treated surfaces, so make sure to apply Maxforce or Avert where you are certain _____ has been applied. In general, make your placements about 2 – 3 feet apart.

- A. Spray
- B. Avert
- C. No residual pesticide
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

182. In the average cabinet, you will need to make 6-8 placements with Maxforce. Since Maxforce comes out like toothpaste, it is difficult to penetrate voids with it. Use _____ for these hard to penetrate nest sites.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

183. Avert is a different flavor than _____ and when the two are used together, you will get the quickest results. This is achieved because you are offering the insects a variety of food.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

184. By having _____ , the roaches are more likely to find one of the products. Since roaches will change their diet, having an option ensures they will find one if they don't like the other.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

Aerosols

185. Aerosol insecticides may or may not have _____ .

- A. Spray power
- B. Residual activity
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides strength
- F. None of the Above

186. A non-residual spray alone may not provide a high degree of control, but when used with a _____, a high degree of control can be achieved.

- A. Spray
- B. Avert
- C. Dusts
- D. Residual spray or dust
- E. Aerosol insecticides
- F. None of the Above

187. _____ are useful for determining the location and extent of a cockroach infestation. Small amounts of pesticide applied to hidden areas and shelters force cockroaches to evacuate and move across previously treated surfaces.

- A. Sprays
- B. Avert
- C. Dusts
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

188. Residual aerosols should be used in the same manner as other types of _____.

- A. Sprays
- B. Residual sprays
- C. Dusts
- D. Residual aerosols
- E. Aerosol insecticides
- F. None of the Above

Inorganic insecticides

189. Boric acid and powders of _____ and diatomaceous earth are examples of inorganic insecticides that can be used effectively for cockroach control in homes.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

190. These _____ to humans and pets, and retain their effectiveness long after initial application. Usually, a longer period of time is required to achieve control, but reapplications are greatly reduced.

- A. Silica aero gel is safe
- B. Chemicals
- C. Boric acid is safe
- D. Non-residual aerosols are safe
- E. Chemicals are low in toxicity
- F. None of the Above

191. Apply boric acid, silica aero gel or _____ in a light film to cracks and crevices and other cockroach hiding places. Avoid applications to moist or damp areas, especially when using silica aero gel or diatomaceous earth.

- A. Silica aero gel
- B. Diatomaceous earth
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

192. If cockroaches become established, _____ may be needed in combination with good sanitary practices.

- A. Silica aero gel
- B. Chemical control
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

Insect Growth Regulators

193. Some synthetic _____ mimic natural hormones found in insects. When applied to cockroaches during their early developmental stages, they cause nymphs to molt into sterile adults.

- A. Compounds
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

194. _____ have low human toxicity, but have long residual effectiveness.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

195. For best results they must be applied along with residual insecticides to eliminate existing adults or other non-susceptible stages. Over-all population reduction with _____ usually takes several months.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

Roach Traps

196. Regardless of the treatment method you choose, another tool which can be a great help when treating roach infestations is the _____.

- A. Silica aero gel
- B. Chemicals
- C. Use of Roach Traps
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

197. These rely on _____ to attract all types of roaches but they work particularly well for German and several of the large roach species.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Roach pheromones
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

198. Place them where roaches have been seen. The _____ will attract males ready to reproduce, females in search of nest sights (the odors emitted signal a roach gathering place or nest) and young roaches which are looking for a colony to mix and mingle.

- A. Silica aero gel
- B. Chemical
- C. Pheromones
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

Trapping

199. Several types of _____ are commercially available. Traps capture roaches, and are a good monitoring device. While the traps can be useful to reduce light infestations, they do not effectively control heavy cockroach infestations.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Cockroach traps
- F. None of the Above

200. Place _____ against a vertical surface, preferably a corner, where cockroaches are usually found. They are most effective when placed under sinks, in cabinets, near the kitchen stove or refrigerator, in basement corners or near floor drains.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

You are finished with your assignment, please fax or e-mail a copy of your driver's license and the Answer Key and Registration form. Always call us the next day to ensure we received all your information.

Our e-mail is info@tlch2o.com our fax number is (928) 468-0675

Cockroach Control Assignment #2 For Students Names F-L

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 70 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 272-0747. This assignment is available to you in a Word Format on TLC's Website. You can find online assistance for this course on the in the Search function on Adobe Acrobat PDF to help find the answers. Once you have paid the course fee, you will be provided complete course support from Student Services, Dr. Rusty Randall or Dr. Bubba Jenkins (928) 468-0665.

Write your answers on the Answer Key found in the front of this assignment.

Write your answers on the Answer Key found in the front of this assignment.

1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.
2. You will need to pick one of the following five assignments to complete. This selection process is based upon your last name. If your last name begins with an A to E, you will pick assignment number 1, if your last name begins with the letter F to L, you are to complete assignment number 2 and if your last name begins with the letter M-P, you will pick assignment number 3 and if your last name begins with the letter Q-S, you will pick assignment number 4, and if your last name begins with the letter T-Z, you will pick assignment number 5.

Multiple Choice, Please select one answer and mark it on the answer key. The answer must come from the course text. (s) Means answer can be plural or singular.

Common Pest Cockroaches

1. Common pest cockroaches include the American, German, Oriental, Madeira, and

_____.

A. Asian	D. Brown-banded
B. American	E. Oriental
C. Madeira	F. None of the Above

2. The _____ cockroach began to cause concern in the United States when it appeared in large numbers in Florida in the late 1980s.

A. Asian	D. German
B. American	E. Oriental
C. Madeira	F. None of the Above

3. All but the _____ cockroach are introduced species to North America.

A. Asian	D. German
B. American	E. Oriental
C. Madeira	F. None of the Above

Life Cycle

4. All roaches have _____ in their life cycle -- egg, nymph (young) and adult.

A. Ootheca	D. Internode
B. Imago	E. Three stages
C. Pedipalps	F. None of the Above

5. Females carry a bean-shaped egg capsule (_____) which is full of eggs. The newly emerged nymphs are identical to their parents except for their smaller size and lack of wings.

A. Ootheca	D. Internode
B. Imago	E. Three stages
C. Pedipalps	F. None of the Above

6. The _____ grow into adults by periodically shedding their skins, and may appear white for a few hours until their new skin darkens.
- A. Detritivore
 - B. Nymphs
 - C. Malformation
 - D. Dealates
 - E. Instar
 - F. None of the Above

Live Everywhere

7. Cockroaches can be present in almost any _____. They move quickly and are especially active at night.

- A. Home
- B. Inside household goods
- C. Business
- D. Place inhabited by humans
- E. Area
- F. None of the Above

8. Characteristically, most roaches _____ or between surfaces that provide darkness and cover. Inside buildings, roaches move freely between rooms or adjoining apartments using wall spaces, plumbing and other utility installations.

- A. Live in cracks and crevices
- B. Breed in cracks and crevices
- C. Die in cracks and crevices
- D. Molt in cracks and crevices
- E. Hide in cracks and crevices
- F. None of the Above

9. They _____ in food and beverage boxes, grocery sacks, animal food and other household goods.

- A. Cause allergens
- B. Love to eat
- C. Are especially active at night
- D. Reject pesticides
- E. Can be carried into structures
- F. None of the Above

10. Cockroaches can eat almost anything, but they are especially partial to starchy foods and meat products. They feed on such diverse items as cereals, pastries, chocolate, milk products, beverages, cooked potatoes, glue, _____, wall paper, animal food, fresh or dried blood, excrement, dead animals and leather products.

- A. Allergens
- B. Book bindings
- C. Bait Gel
- D. Vegetables
- E. Starchy foods and meat products
- F. None of the Above

Damage

11. Disease Transmission. Cockroaches can carry _____ that cause human diseases, including food poisoning, dysentery and diarrhea. However, roaches have not been associated with serious disease outbreaks in the United States.

- A. Allergen(s)
- B. Organisms
- C. Repulsive odor
- D. Germs
- E. Pathogen(s)
- F. None of the Above

Allergy

12. Roaches can cause _____ in some people. The response is caused by roach "allergen" that is ingested with contaminated food or inhaled when dried fecal particles and fragments of ground-up bodies of dead roaches are mixed with house dust.

- A. Allergens
- B. Mutations
- C. Allergic reactions
- D. Considerable psychological or emotional distress
- E. Disease
- F. None of the Above

Anxiety

13. The _____ of cockroaches can cause considerable psychological or emotional distress in some individuals.

- A. Sight
- B. Odor
- C. Smell
- D. Considerable psychological or emotional distress
- E. Long lasting view
- F. None of the Above

14. Cockroaches usually do not bite, but their heavy leg spines _____.

- A. Will poke
- B. May scratch
- C. Have sharp edges
- D. Will cause considerable psychological or emotional distress
- E. Are not a threat
- F. None of the Above

Scientific Classification

15. Cockroaches make up the order Blattodea, which contains _____.

- A. Family Blattidae
- B. Madeira cockroach
- C. Cryptocercidae
- D. Five families
- E. Gromphadorina portentosa
- F. None of the Above

16. The American cockroach is _____, and the Oriental cockroach is *Blatta orientalis*, both in the family Blattidae.

- A. Family Blattidae
- B. Madeira cockroach
- C. *Periplaneta americana*
- D. *Blatella germanica*
- E. *Gromphadorina portentosa*
- F. None of the Above

17. The German cockroach, *Blatella germanica*, the Asian cockroach, _____, and the brownbanded cockroach, *Supella longipalpa*, are in the family Blatellidae.

- A. Family Blattidae
- B. Madeira cockroach
- C. Cryptocercidae
- D. *Blatella germanica*
- E. *Blatella asahinai*
- F. None of the Above

18. The Madeira cockroach is *Leucophaea maderae*, the Brazilian cockroach is *Blaberus giganteus*, and the Madagascar hissing cockroach is _____, all in the family Blaberidae.

- A. Family Blattidae
- B. Madeira cockroach
- C. Cryptocercidae
- D. *Blatella germanica*
- E. *Gromphadorina portentosa*
- F. None of the Above

19. The remaining families are the Cryptocercidae and the _____.

- A. Family Blattidae
- B. Madeira cockroach
- C. Cryptocercidae
- D. *Blatella germanica*
- E. Polyphagidae
- F. None of the Above

20. There are 55 species of _____ in the United States, but only five of these are troublesome in the most States.

- A. Family Blattidae
- B. Madeira cockroach
- C. Cryptocercidae
- D. *Blatella germanica*
- E. Cockroaches
- F. None of the Above

German Cockroach

21. The German cockroach is the most common and the most difficult to control. Both adults and nymphs are _____ and have two longitudinal dark lines on their thorax (back).

- A. General in appearance
- B. Instars
- C. Light brown
- D. Have two longitudinal dark lines on their thorax (back)
- E. Black
- F. None of the Above

22. Adults are 1/2 to 3/4 inch long, and both males and females have _____ as long as the body.

- A. Antennas
- B. Wings
- C. Eggs
- D. Two longitudinal dark lines on their thorax (back)
- E. Legs
- F. None of the Above

23. _____ are similar in general appearance, but lack wings and may be as small as 1/8 inch.

- A. Instars
- B. Filiforms
- C. Immature stages
- D. Two longitudinal dark lines on their thorax (back)
- E. Nymph(s)
- F. None of the Above

24. The adult German cockroach is about 5/8 inch long, overall light brown in color with wings that cover the _____.

- A. Internode
- B. Dealates
- C. Proboscis
- D. Abdomen
- E. Furculum
- F. None of the Above

25. The _____ just behind the head (pronotum) is marked with two prominent black stripes.

- A. Osmeterium
- B. Thoracic shield
- C. Scutellum
- D. Wings
- E. Poikilotherm
- F. None of the Above

26. Immature stages (nymphs) are smaller, _____ and have a pale stripe (on at least the second and third thoracic segments in first stage nymphs) running lengthwise down the middle of the darker brown body.

- A. First stage nymphs
- B. Adult(s)
- C. Immature stages
- D. Wingless
- E. Nymph(s)
- F. None of the Above

27. The field cockroach, *Blattella vaga* Hebard, is similar to the _____ in appearance, but it occurs primarily outdoors where it feeds on decaying plant materials.

- A. German cockroach
- B. Field cockroach
- C. Banded
- D. Brownbanded cockroach
- E. Nymphs
- F. None of the Above

28. Compared to the _____, it is more active during daylight hours and will be found around lights. They also are known to fly when disturbed.

- A. German cockroach
- B. Field cockroach
- C. Banded
- D. Brownbanded cockroach
- E. Nymphs
- F. None of the Above

29. The _____, *Supella longipalpa* (Fabricius) is about the same size as the German cockroach, but appear "banded" because the wings are marked with a pale brown band at the base and another about a third of the distance from the base.

- A. German cockroach
- B. Field cockroach
- C. Banded
- D. Brownbanded cockroach
- E. Nymphs
- F. None of the Above

30. _____ produce an egg capsule that is attached to the end of the abdomen for up to a month before being dropped a day or so before eggs hatch.

- A. German cockroach
- B. Field cockroach
- C. Banded
- D. Brownbanded cockroach
- E. Nymphs
- F. None of the Above

31. Each 5/16 inch long, _____ contains 30 to 40 eggs (oothecae) which hatch in 2 to 4 days after being deposited.

- A. New infestations
- B. Diapause
- C. Scutellum
- D. Dactyls
- E. Mesophyll
- F. None of the Above

32. _____ from eggs are less than 1/8 inch long and wingless. They develop through 6 to 7 stages (instars) over 74 to 85 days (varying with temperature) before becoming adults. There may be four generations per year.

- A. New infestations
- B. Dealates
- C. Parthenogenesis
- D. Femora
- E. Nymphs hatching
- F. None of the Above

33. This is mainly an indoor species, although they will also _____ from structure to structure.

- A. Start infestations
- B. Migrate outdoors
- C. Be active at night
- D. Have a life expectancy of six months
- E. Fly
- F. None of the Above

34. Occasionally, new infestations begin by bringing in cartons and other materials from infested structures that _____.

- A. Start new infestations
- B. Cause allergic reactions
- C. Are mainly active at night
- D. Harbor the roaches or their eggs
- E. Start in and around the landscape
- F. None of the Above

35. Kitchens, bathrooms and other locations that provide food, moisture, warmth and shelter are _____.

- A. Great new infestations
- B. Preferred habitats
- C. Mainly active at night
- D. Wet
- E. Dry
- F. None of the Above

36. German cockroaches are mainly active at night, when they _____ for food and water.

- A. Search
- B. Frass
- C. Detritivore
- D. Mesophyll
- E. Roset
- F. None of the Above

37. During the day, they remain concealed in _____ unless they are overcrowded, with all developmental stages occurring together.

- A. Brush
- B. Cracks and crevices
- C. Table tops
- D. Groups
- E. Masses on interior walls
- F. None of the Above

38. They also can occur in attics, _____, crawl spaces, foundation cracks, garbage areas and around the landscape. May spread food contaminants.

- A. Microwave ovens
- B. Window sills
- C. Muffler pipes
- D. Coffee machines
- E. Wall voids
- F. None of the Above

39. Some people have allergic reactions to cockroaches or _____ (e.g., feces, body extracts).

- A. Infestations
- B. Allergic reactions
- C. Eggs
- D. Cockroach residues
- E. Droppings
- F. None of the Above

40. One of the most common household cockroach pests in the U.S.; presence in homes is a nuisance and they may spread food contaminants. Some people have _____ to cockroaches or cockroach residues (e.g., feces, body extracts).

- A. Infinity
- B. Attraction
- C. Allergic reactions
- D. Desire
- E. Move immediately from
- F. None of the Above

41. The German cockroach has approximately six generations per year and _____ is completed in 50 to 60 days.

- A. Crepuscular
- B. Will live
- C. Internode
- D. Dimorph
- E. Each generation
- F. None of the Above

42. The adult German cockroaches have a _____. This roach cannot fly but may glide very short distances if disturbed.

- A. Instar
- B. Internode
- C. Malformation
- D. Life expectancy of twelve months
- E. Life expectancy of six months
- F. None of the Above

43. German cockroaches can live in almost any room of a home or building. Because these roaches require water, they prefer a _____, such as around kitchen and bathroom sinks, appliances, furnaces, water heaters and furnace ducts.

- A. Warm dry area
- B. Dark cold area
- C. Home
- D. Warm moist environment
- E. Source of water
- F. None of the Above

44. A roach does not need head to breathe -- they _____ through their bodies and can survive for a month without food. A headless cockroach will live for about a week until it dies of thirst.

- A. Absorb oxygen
- B. Will live
- C. Estivate
- D. Metamorphose
- E. Overwinter
- F. None of the Above

Brownbanded Cockroach

45. Both nymphs and adults of this species are _____ and can be distinguished easily by the presence of two angled or transverse bands across the base of the wings and abdomen.

- A. Black
- B. Red
- C. Light brown
- D. Internode
- E. Detritivore
- F. None of the Above

46. Adult males are 1/2 to 5/8 inch long; the female is slightly shorter. Though both have wings, only the _____ can fly.

- A. Male
- B. Female
- C. TV roaches
- D. Nymphs and adults
- E. Instars
- F. None of the Above

47. The _____ carries each egg capsule for only a day or two before attaching it to a protected surface.

- A. Adult males
- B. Female
- C. Ovipositor
- D. Dealates
- E. Phytotoxemia
- F. None of the Above

48. The egg capsules are usually _____, and most of the eggs hatch within 50 days.
- A. Diapause D. Deposited in clusters or rows
 B. Cursorial E. Deposited in frass
 C. Scutellum F. None of the Above
49. Approximately 5 to 18 egg capsules are produced per female, each containing 19 eggs. About 3 to 9 months are required to complete the _____.
- A. Diapause D. Defoliate, defoliation
 B. Estivation E. Reproductive cycle
 C. Metamorphosis F. None of the Above
50. _____ prefer a dry, warm environment. They are generally found on ceilings, high on walls, and in light switches, closets and furniture. In some places they are known as "TV roaches" because of their frequent presence in living-room furniture and appliances.
- A. Adult males D. Nymphs and adults
 B. Female E. Reproductives
 C. TV roaches F. None of the Above
51. The wings of _____ cover their abdomens, while the females' wings are shorter. The yellow bands across the back are more pronounced on nymphs than on adults.
- A. Adult males D. Nymphs and adults
 B. Female E. Dealates
 C. Ovipositor F. None of the Above
52. These cockroaches are quite active, and the adults, especially the males, fly rapidly when disturbed. Both _____ may jump to escape danger.
- A. Adult males D. Adults and nymphs
 B. Female E. Reproductives
 C. Dealates F. None of the Above
53. The _____ carries her egg capsule for only a day or two before gluing it to a protected surface underneath or inside furniture, in a closet or on the ceiling in a darkened room. They can also be found in televisions and other appliances.
- A. Adult female D. Nymphs and adults
 B. Detritivores E. Dealates
 C. Pedipalps F. None of the Above
54. Brownbanded cockroaches are more apt to be found in homes, apartments, hotels, motels, nursing homes and hospitals than in restaurants, grocery stores and other commercial establishments. They prefer starchy foods and appear to have lower water requirements than _____.
- A. American Cockroaches D. Nymphs and adults
 B. German cockroaches E. Other cockroaches
 C. TV roaches F. None of the Above
55. They can occupy drier locations within a building. _____ frequently are found on ceilings in dark or dimly lit rooms, behind picture frames, in light switches, in upper walls of cabinets and closets, or on undersides of furniture and inside upholstered furniture. Because brownbanded cockroaches are found in so many locations they may be more difficult to control.
- A. American Cockroaches D. Nymphs and adults
 B. German cockroaches E. Other cockroaches
 C. TV roaches F. None of the Above

American Cockroach (*Periplaneta americana*)

56. The American cockroach is the largest of the common species, growing to a length of 1 1/2 to 2 inches. It is reddish-brown with a light yellow band around the edge of the _____.

- A. Petiole D. Exoskeleton
- B. Proboscis E. Crepuscular
- C. Head shield F. None of the Above

57. Adults of both sexes have _____, but seldom fly. They are, however, capable of gliding flights.

- A. Pedipalps D. Well-developed wings
- B. Forbs E. Pronotums
- C. Imagoes F. None of the Above

58. _____ are smaller than adults, grayish-brown in color and less fully winged.

- A. Instars D. Nymphs and adults
- B. Female E. Nymphal cockroaches
- C. Imagoes F. None of the Above

59. The adult female usually drops her egg capsule within a day after it is formed. She often places the capsule near a food or water source or in a location where it can be covered with _____.

- A. Frass D. Miscellaneous debris
- B. Endosperm E. Poikilotherm
- C. Capsule F. None of the Above

60. Occasionally, she glues the capsule to some surface with secretions from her mouth. The capsule may be _____ in moist wood, in cracks in bark or in whorls of plants.

- A. Ovipositor D. Overwinter
- B. Diapause E. Deposited outdoors
- C. Capsule F. None of the Above

American Cockroach

61. _____ of this species are 1 1/2 to 2 inches long. They are the largest of all the cockroaches common in the World.

- A. Adult males D. Adults
- B. Female E. Nymphal cockroaches
- C. Instars F. None of the Above

62. Both _____ are shiny, reddish brown with a pale brown or yellow band around the edge of the head and back. The wings of both the male and female extend slightly beyond the body.

- A. Adult males D. Nymphs and adults
- B. Female E. Male and female
- C. Instars F. None of the Above

63. The female produces 15 to 90 egg capsules, each containing 14 to 16 eggs. Egg capsules are deposited near a _____ where the majority of eggs hatch within 60 days.

- A. Dactyl D. Endosperm
- B. Internode E. Scutellum
- C. Capsule F. None of the Above

64. The _____ is completed in 12 to 18 months.

- A. Overwinter D. Defoliate, defoliation
- B. Dealate E. Reproductive cycle
- C. Overwinter F. None of the Above

65. The _____ can survive 2 to 3 months without food and for a month without water.
- A. Adult D. Internode
 B. Ovipositor E. Nymphal cockroaches
 C. Malformation F. None of the Above
66. _____ are not typically found in homes; however, in commercial and industrial establishments they can be found in damp, warm basements, in furnace or boiler rooms, and storage rooms.
- A. Adult males D. Nymphs and adults
 B. Females E. American cockroaches
 C. Ovipositors F. None of the Above
67. Because of their preference for _____, they are notable as a problem in urban commercial districts.
- A. Finances D. Heat
 B. Dry areas E. Sewers and heat tunnels
 C. Food F. None of the Above

Oriental Cockroach

68. This dark reddish brown to black roach is commonly referred to as the "_____." It is considered the most repulsive of all of the roaches and has a strong odor.

- A. Roach D. Chinese roach
 B. Sewer bug E. Blackie
 C. Water bug F. None of the Above

69. The adult females are 1 1/4 inches long and_____.

- A. Carries an egg capsule D. Is a reproductive
 B. Lives in sewer drains E. Almost wingless
 C. Has 8 legs F. None of the Above

70. The _____ are 1 inch long and have wings that are about half as long as their body. Neither males nor females can fly or glide.

- A. Dealates D. Adult females
 B. Instars E. Adult males
 C. Nymphs F. None of the Above

71. The _____ carries an egg capsule for about 30 hours and then drops or attaches it to a protected surface near food. On average, a female produces eight egg capsules, each containing 16 eggs which hatch within 60 days.

- A. Dealates D. Reproductives
 B. Nymphs E. Female
 C. Roach F. None of the Above

72. The _____ of this roach is completed in 6 to 9 months.

- A. Egg capsule D. Reproductive cycle
 B. Mating E. Life cycle
 C. Completion F. None of the Above

73. _____ prefer damp, cool, dark areas. They are generally found in sewer drains, crawl space areas, basements, cellars, or on the first floor of buildings.

- A. Nymphs D. Dealates
 B. Roaches E. Adult males
 C. Water bugs F. None of the Above

74. Infestations by this roach are most frequently found during spring (_____) and fall (October). They may spend considerable time outdoors during warm weather.
- A. March to June
 - B. June and July
 - C. August
 - D. April and May
 - E. May or June
 - F. None of the Above

Wood Cockroach

75. This group of roaches causes occasional problems in homes and public places. They are seen in late _____, especially after rains.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

76. This roach is often confused with both adult American and _____. However, the wood roach is chestnut brown and has a dull white band around the edges of the head and back.

- A. Females
- B. Roaches
- C. Adults
- D. Oriental roaches
- E. One generation per year
- F. None of the Above

77. Adults are 1 to 1 1/4 inches long. _____ have wings covering only about half the body and do not fly. Males have wings longer than the body and are excellent fliers.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Instars
- F. None of the Above

78. Females produce about 30 egg capsules, each containing about 32 to 36 eggs. This roach completes _____.

- A. Her work
- B. Nymph stage
- C. Egg laying
- D. The life cycle
- E. One generation per year
- F. None of the Above

79. Wood cockroaches are usually found in wood piles, hollow trees or under loose bark. Buildings in wooded areas are prone to have problems with wood roaches during rainy periods. Although this roach prefers to live outside, _____ are attracted to light and may enter buildings. They are sometimes brought in along with firewood, but do not usually survive or multiply inside buildings.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Dealates
- F. None of the Above

80. The _____ is slightly more than 1 inch long and is a uniform, very dark brown to black. The head shield is a solid dark color.

- A. Females
- B. Roaches
- C. Adult
- D. Adult males
- E. Nymphs
- F. None of the Above

81. Both _____ have wings longer than their bodies and are capable of flying or gliding.

- A. Dealates and Instars
- B. Roaches
- C. Adults and Instars
- D. Nymphs and Adults
- E. Males and females
- F. None of the Above

82. Nymphs are smaller than adults and have only partially developed wings. _____ usually carry their egg capsules for a day or two before attaching them to the outside surfaces of buildings and other protected sites near the ground.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Adult females
- F. None of the Above

83. These _____ live primarily outdoors and prefer wood, leaf litter, trash piles and other humid sites with abundant organic matter. They also hide under rocks, ground cover and building materials. They may enter homes with infested firewood during seasonal migrations.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Cockroaches
- F. None of the Above

Habitat

84. The Smokybrown cockroach has a great tendency to lose moisture through the cuticle and thus requires water every two to three days. These requirements are important to remember when implementing your _____.

- A. Treatment
- B. Monitoring
- C. Penetration
- D. Control program
- E. Roach extermination program
- F. None of the Above

85. This pest is most likely found in areas which are protected, moist, dark, relatively warm and free from the _____. In nature, tree holes and the canopies of palm trees offer the ideal environment in which this bug can thrive.

- A. Pesticide
- B. Dry habitat
- C. Deep penetration
- D. Desiccating effects of air flow
- E. Treatment
- F. None of the Above

Control Smokybrown Cockroaches

86. Eliminate or alter any conditions which encourage the _____ of the roaches. These pests thrive in dark, humid areas which have little or no air flow.

- A. Life cycle
- B. Moist habitat
- C. Deeper penetration
- D. Presence and/or reproduction
- E. Removal and destroying hiding areas
- F. None of the Above

87. Spray exterior of structure with Suspend SC, Demon WP or Cynoff WP. These odorless insecticides will give a quick knockdown of bugs while lasting for several weeks, usually yielding about a _____.

- A. 90 day residual
- B. 10 day residual
- C. 1 inch penetration
- D. 30 day residual
- E. 50 day residual
- F. None of the Above

88. Spray any crack, crevice or entry point on the outside of the structure. This includes treating around all windows, doors, vents and in _____ of brick veneer. Also spray tree trunks, from ground to crotch of tree, but no higher than six feet.

- A. Areas
- B. Weep holes
- C. Deep penetration
- D. Areas roaches like to hide
- E. And outside
- F. None of the Above

89. All _____ should be sprayed with insecticide. These exterior surfaces should be treated 3 to 4 times each year.

- A. Interiors
- B. Moist habitats
- C. Mulched areas
- D. Grass and bushes
- E. Roaches
- F. None of the Above

90. If necessary, _____ in the following areas: basements, garages, carports, attics, closets, laundry rooms.

- A. Trap
- B. B and G
- C. C/C
- D. Dust
- E. Spray indoors
- F. None of the Above

91. Also treat beneath and behind large appliances (refrigerators, stoves, etc.) or other areas where these _____. (Spraying all of your baseboards with any bug spray is not necessary!)

- A. Thrive in the dark
- B. Have a moist habitat
- C. Penetrate
- D. Pests live
- E. Roaches prefer to hide
- F. None of the Above

92. Indoor areas should be treated _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. 2 to 3 times per year
- E. 1 to 2 times per year
- F. None of the Above

93. Hollow blocks or other areas such as behind brick walls and along plumbing lines should be treated with _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

94. Although many dusts will kill roaches, _____ is water-proof and will not be destroyed by the moist habitat of the Smokybrown as would other dusts.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

95. For deeper penetration and better distribution of insecticide dust, use a _____. Delta Dust should be used once each year or as needed.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

Asian Cockroach *Blattella asahinai*

96. The Asian cockroach was identified as a _____ to the United States in 1986 when a professional pest control operator collected these insects in Lakeland, Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. Newly introduced species
- F. None of the Above

97. He referred to them as German cockroaches, *Blattella germanica* (L.), but noted that their behavior was unlike any other _____ that he had previously encountered. Upon further investigation the cockroaches were found to be *B. asahinai*, Asian cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

Distribution and Habits

98. The Asian cockroach was first described in 1981 from insects collected on Okinawa Island, Japan. It is most likely that _____ was introduced into the United States through imports from Japan.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. B. asahinai
- E. Wood cockroach(es)
- F. None of the Above

99. Since the first identification of _____ in Lakeland (Polk County), it has been reported from Marion County in central Florida to Broward County in southwest Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. B. asahinai
- F. None of the Above

100. The primary habitat of the _____ is outdoors in shaded mulched or composted areas, such as landscaping and gardens, where fresh plant litter accumulates.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Water bug
- E. Wood cockroach(es)
- F. None of the Above

101. Populations of 30,000 to 250,000 insects per acre have been reported. Members of this species are strong fliers, unlike their close relative, the _____.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Polish cockroach
- E. Wood cockroach(es)
- F. None of the Above

102. They may invade structures but indoor infestations are rare occurrences. They become _____ and are attracted to light-colored surfaces and brightly lit areas.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Male tergal glands
- E. Indoor infestations
- F. None of the Above

103. _____ will take flight during the day if disturbed. The presence of this pest is obvious since their peak activity period coincides with our leisure time.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Males
- E. Indoor infestations
- F. None of the Above

Description

104. _____ are almost identical to German cockroaches. Chemical analysis by gas chromatography will confirm the species.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Wood cockroach(es)
- E. Indoor infestations
- F. None of the Above

105. However, there are also slight morphological differences between B. asahinai and B. germanica. _____ adults have longer and narrower wings than those of German cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Black
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

106. There are also differences between _____ in the shape of the male tergal glands.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Female tergal glands
- E. The species
- F. None of the Above

107. Asian cockroach females produce _____ and nymphs are smaller than that of German cockroaches.

- A. Females
- B. Roaches
- C. Adults
- D. Smaller egg capsules
- E. Wings
- F. None of the Above

108. Asian cockroach first instars have 23 antennal segments while German cockroach first instars have 24 to 25. Finally, margins of the abdomen and spots along the abdominal midsection of *B. asahinai* late instars _____, whereas those areas are lightly pigmented in *B. germanica*.

- A. Appear red
- B. Appear white
- C. Appear black
- D. Are small
- E. Are large
- F. None of the Above

Life Cycle

109. Female Asian cockroaches have a lifetime reproductive potential for producing approximately four egg capsules, each averaging _____.

- A. 137 nymphs
- B. 100 nymphs
- C. 37 nymphs
- D. 3700 nymphs
- E. 370 nymphs
- F. None of the Above

110. Immatures take approximately 67 days to reach adulthood. Females can then live for 104 days and males can live for _____.

- A. 49 days
- B. 49 weeks
- C. 49 years
- D. 149 days
- E. 490 days
- F. None of the Above

111. Females can produce their first egg capsule _____ after adult eclosion, and can drop another 20 days later.

- A. 23 days
- B. 33 days
- C. 3 days
- D. 10 days
- E. 13 days
- F. None of the Above

112. Adults are abundant _____ and again August through September. Nymphs predominate May through August.

- A. March to June
- B. June and July
- C. February through May
- D. April and May
- E. May or June
- F. None of the Above

Management

113. _____ of Asian cockroaches is difficult due to their mobility and abundance of population sites.

- A. Typically treatment
- B. Control
- C. Tracking
- D. Management
- E. Numerous infestations
- F. None of the Above

114. Traditional treatments using _____ inside and around the perimeter of a structure are ineffective due to numerous infestations in mulched and wooded areas.

- A. Traps
- B. Control
- C. Dusts
- D. B and G
- E. Residual sprays
- F. None of the Above

115. Plus, adults enter homes through windows and doorways, avoiding areas typically treated for _____ of German cockroaches.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Numerous infestations
- F. None of the Above

116. Sodium vapor lamps for security lighting and yellow incandescent bulbs for porch lighting are both less attractive to adults and would thereby _____ of adult insects to lighting near buildings.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Reduce attraction
- F. None of the Above

117. Although Asian cockroaches are susceptible to all pesticides, toxic pelletized baits scattered outdoors have _____.

- A. Typically been treated
- B. Been controlled
- C. Been susceptible
- D. Are less attracted
- E. Provided the most reliable control
- F. None of the Above

118. The _____ for a pesticide or herbicide to enter the body are: inhalation, skin and eye contact, ingestion, and injection.

- A. Prevention techniques
- B. Basic cycle
- C. Basic routes
- D. Direction
- E. Methods
- F. None of the Above

119. The prevention of entry by one of these routes can be accomplished by control mechanisms such as engineering controls, personal protective equipment, and _____.

- A. Prevention
- B. Basic routes
- C. Safety
- D. Can be minimized
- E. Administrative controls
- F. None of the Above

120. Each route can be minimized by a variety of _____ depending on the hazard and operation.

- A. Prevention methods
- B. Basic routes
- C. Control measures
- D. Techniques
- E. Administrative controls
- F. None of the Above

Madagascar Giant Hissing Roaches

121. The cockroach family, to which Madagascar roaches belong, is among the most primitive of the winged insects. The nearest relatives to _____ include mantids, grass-hoppers, stick insects, and termites.

- A. Bees
- B. Cockroaches
- C. Winged insects
- D. Beetles
- E. Bed bugs
- F. None of the Above

122. There are at least 3,500 known species living today, in _____, most of which originate in the tropics.

- A. 500 genera
- B. 450 genera
- C. 400 genera
- D. On this planet
- E. USA
- F. None of the Above

123. As a group, cockroaches exhibit a _____ of sizes, colors, and habits.

- A. Diurnal
- B. Small diversity
- C. Commensally
- D. Wide diversity
- E. Cornucopia
- F. None of the Above

124. Although they have an infamous reputation as household pests, in reality only about half a dozen species (less than one percent of all known forms) have _____ with humans.

- A. Diurnal skills
- B. Exhibited hostility
- C. Made friends
- D. Negative associations
- E. Toxic relationships
- F. None of the Above

125. Many species are diurnal, some are _____, and others live in the ground or are wood-boring. Some, such as the Madagascan roach, do not have wings.

- A. Intellectual
- B. Semiaquatic
- C. Hostile
- D. Scavengers
- E. Toxic
- F. None of the Above

126. About a dozen or so species live _____ in the nests of ants, wasps, or termites.

- A. Diurnal
- B. Near and
- C. Commensally
- D. As scavengers outdoors near
- E. As friends
- F. None of the Above

127. There are also roach species that inhabit caves with bats or live in the desert. The majority of cockroaches in tropical countries exist as scavengers outdoors, feeding on vegetation and organic matter in _____.

- A. Their nests
- B. The tropics
- C. Dry areas
- D. Outdoors
- E. An apparently harmless fashion
- F. None of the Above

128. The toxicity of the Thailand and Middle-Asian cobra venoms as well as of their isolated components (_____ and some others) for cockroach *Gromphadorhina portentosa* was studied.

- A. Poisons
- B. Sugars
- C. Vapors
- D. Neurotoxins, cytotoxins, phospholipases
- E. Toxic
- F. None of the Above

129. It was found that, as compared to mammals, cockroaches are _____ to cobra venoms and their components.

- A. Diurnal
- B. More resistant
- C. Related
- D. Scavengers
- E. Toxic
- F. None of the Above

Cockroach Management Strategies

Prevention

130. _____ of roach colonies can be prevented by close inspection of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.

- A. Entry and establishment
- B. Elimination
- C. Should not be left
- D. Avoid unnecessary control
- E. Developed resistance
- F. None of the Above

131. Caulking or puttying areas such as cracks and crevices around kitchen cabinets, bathtubs, water and plumbing pipes, cracks on floors and walls, and exterior windows and doors can eliminate most hiding places and _____.

- A. Cannot elevate growth
- B. Can eliminate
- C. Should not be left
- D. Help reduce the cockroach population
- E. Helps develop resistance
- F. None of the Above

132. Other structural modifications, such as weather stripping and pipe collars, also help to _____.

- A. Increase protection
- B. Can eliminate
- C. Kill the pests
- D. Avoid unnecessary growth
- E. Reduce cockroach entry and establishment
- F. None of the Above

Sanitation

133. Good housekeeping is the most important factor in preventing and _____.

- A. Cannot be forgotten
- B. Elimination
- C. Should not be left
- D. Controlling cockroach populations
- E. Reducing resistance
- F. None of the Above

134. Cockroaches _____, water and shelter. Do not allow food particles to remain on shelves or floors.

- A. Cannot live without food
- B. Can eliminate
- C. Storage areas should not be left
- D. Avoid unnecessary food stuffs
- E. Have developed resistance
- F. None of the Above

135. Dishes should not be left unwashed after a meal, particularly overnight. Clean areas under refrigerators, stoves, sinks and furniture regularly to remove bits of food that have accumulated. If pets are fed indoors, _____, especially overnight. Store pet food in tight containers, and clean litter boxes frequently.

- A. Use baits
- B. Use dusts
- C. Should not be left
- D. Avoid unnecessary food
- E. Teach pets to deal with the cockroaches
- F. None of the Above

136. Keep all food items covered or in a refrigerator at all times between uses. Empty garbage and _____ and keep refuse in a covered container away from the residence.

- A. Burn it
- B. Eliminate extra humans
- C. Should not be left
- D. Avoid unnecessary
- E. Develop control methods
- F. None of the Above

137. If possible, _____. Common sources include leaking faucets and pipes, drains, toilet tanks, wash basins and sink traps, aquaria and water-filled tubs. Pets' water dishes, beverage bottles or cartons, and pipe condensation can provide an adequate water supply for roaches. Roach breeding is encouraged by clutter.

- A. Move
- B. Use dusts
- C. Call pest control
- D. Avoid unnecessary outdoor activities
- E. Use DDT
- F. None of the Above

138. Avoid unnecessary storage of corrugated paper boxes, piles of paper bags, newspaper, magazines, and _____.

- A. Concrete
- B. Beer
- C. Boric acid
- D. Metal
- E. Motor oil
- F. None of the Above

Chemical Control

139. Cockroaches have been the target of many insecticides over the years but they have _____ to several of them.

- A. Cannot escape
- B. Eliminated
- C. Evolved
- D. Learned to avoid eating
- E. Developed resistance
- F. None of the Above

140. Attempts to use pheromones as sex lures or to sterilize male cockroaches have thus far not _____ on a large scale.

- A. Proved practical
- B. Worked
- C. Impressed
- D. Proved cost effective
- E. Developed resistance
- F. None of the Above

141. _____ such as diatomaceous earth to penetrate their protective cuticles may work in individual households as a nonpoisonous alternative.

- A. Dusts
- B. Salts
- C. Sprinkling abrasives
- D. Avoid unnecessary dusting
- E. Spraying pesticides
- F. None of the Above

142. Once the cuticle is abraded, the roaches die of dehydration. Also effective is _____, which is both abrasive and poisonous to cockroaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Boric acid powder
- F. None of the Above

143. _____ cockroaches from multiplying is to keep a clean house and block their access to water, which they need to survive.

- A. Crack and crevice or C/C
- B. Drione Dust will control
- C. Application of pesticide to
- D. The best way to prevent
- E. Crusader Hand Dust will kill
- F. None of the Above

144. American cockroaches are very easy to keep and rear in the laboratory and make excellent subjects for experimentation because of their large size and _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Treatment Methods

145. The disadvantage is that the treatments need to be where the roaches are hiding. Cockroaches have been seen thriving less than a foot away from _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. A treated surface
- F. None of the Above

146. Their path of feeding and moving to and from shelter never crossed the _____. This enabled them to live virtually on top of treated areas and yet still survive.

- A. Crack and crevice or C/C
- B. Treated surfaces
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Cracks and Crevice

147. When roaches began to build resistance to chemicals and manufacturers designed their products with less volatility, new packaging and treatment techniques became necessary. These new trends became known as "_____".

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

148. Basically, _____ means applying the chemical into the cracks and crevices suspected of harboring roaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

149. There are two types of products commonly used for this purpose: _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

150. In fact, a good pest control technician should be able to get roach control with nothing more than _____ if he or she knows where to do the application.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust
- E. Crusader Hand Duster
- F. None of the Above

151. _____ has solved many roach problems. Apply it in cracks and crevices, behind cabinets and major appliances, in wall voids and electric outlets.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

152. This requires a lot of work and this product can be messy to work with, but provides the _____ when used properly.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

153. Use a _____ for the application. Since dust can be messy to work with, aerosol products became popular throughout the 1980's.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

154. The professional line of products which is discussed are truly effective and not commonly available. Their _____ are effective because insects have not been able to build resistance.

- A. Crack and crevice or C/C
- B. Active ingredients
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

155. There are several stories of super roaches and the fact that "even the bugman" couldn't get rid of "my" roaches, but what it all boils down to is the _____ and the choice of product. If the products used are the ones as mentioned above and the treatment is thorough and complete, there is little chance of any roach surviving nor of re-infestation.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

156. Most insects, certainly roaches, cannot live where _____ has been applied. That being said, all you need to do is apply it wherever roaches want to be. This process of eliminating their nest sights eliminates their population.

- A. Crack and crevice or C/C
- B. Drione
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

157. The reason they appear to be "resistant" in most cases is that they are simply avoiding treated areas. This can happen when products are mixed at higher rates or when applicators fall victim to treating the same areas over and over again. The roaches which survive all these _____ are the ones which are going where the applicator has failed to treat.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Applications
- F. None of the Above

158. Today, these problems have been all but eliminated with the _____. These new methods are both safer and easier to do.

- A. Crack and crevice or C/C
- B. Latest treating methods
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

159. Although _____ has long been the main method to get roach control, baiting has become a legitimate method as new baits hit the market. These products have been tested and proven effective.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Spraying
- F. None of the Above

Residual Sprays

160. These formulations are oil-based or water-based emulsions and water-based suspensions (_____). They are available in ready-to-use pressurized containers or non-pressurized containers with built-in spray pumps.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

161. _____ also can be purchased as concentrates to mix with water before applying with a compressed-air sprayer, plunger-type sprayer or paint brush.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

162. Be careful when using _____; they may stain, dull or damage certain floor tiles, linoleum, painted surfaces, plaster, plastics, houseplants, carpets and carpet backing.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

163. _____ can create a fire hazard when used near an open flame (pilot lights, gas stoves, furnaces). Water emulsions may stain wallpaper, light-colored carpets, draperies or other materials.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

164. They can short out electrical circuits, and are inferior to _____ on impervious surfaces such as glass or metal.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

165. _____ must be frequently agitated in the spray tank, but they leave the most active residues, especially on porous surfaces such as unpainted wood, mortar or concrete block.

A. Residual sprays D. Oil-based insecticides
B. Wettable powders E. Oil-based sprays
C. Dusts F. None of the Above

166. _____ are generally easy and fast to apply. The spray should wet or dampen the treated surface; do not allow spray to puddle or run off. When treating for cockroaches, pay particular attention to cracks and crevices. Exposed surfaces, especially those used to prepare foods, should usually not be treated with sprays.

A. Residual sprays D. Oil-based insecticides
B. Wettable powders E. Oil-based sprays
C. Dusts F. None of the Above

Dusts

167. _____ sometimes suffices as the only treatment for cockroaches, but is most often a supplemental treatment.

A. Residual sprays D. Oil-based
B. Wettable powders E. Insecticide dust
C. Dusts F. None of the Above

168. _____ generally have longer residual action than sprays, but are ineffective if they become damp.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Dusts F. None of the Above

169. Dusts are useful in cockroach control because they can be placed deep in cracks, crevices and wall voids; under refrigerators and furniture; around pipes, tunnels and conduits; on very smooth or very rough surfaces; and in other places not treatable with _____.

A. Residual sprays D. Oil-based
B. Wettable powders E. Other formulations
C. Dusts F. None of the Above

170. Do not use dusts for treating large surfaces because they leave unsightly deposits. Also, cockroaches avoid _____ and will not walk through thick layers of the material.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Heavy deposits F. None of the Above

171. Use light pressure on the application device to minimize the amount of dust in living areas. Apply _____ as light, even residues that are barely visible.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Dusts F. None of the Above

Baits

172. Several cockroach _____ are sold in ready-to use containers. They also can be made using a combination of food attractants and a toxicant. If cockroaches will not feed on the bait, the insecticide has no effect.

A. Residual sprays D. Oil-based
B. Wettable powders E. Baits
C. Dusts F. None of the Above

173. Thus, it is important not to contaminate stored _____ with organic solvents, other insecticides, fungicides and fertilizers.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Bait
- F. None of the Above

174. Baits are usually long lasting and often work well in areas that cannot be effectively sprayed or dusted. _____ are often most useful when used in conjunction with a residual spray or dust.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

175. _____ give best results in buildings where there are few alternative food supplies.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

176. Always use a sufficient number of _____ to adequately treat an area where cockroaches are to be controlled. Examine the bait containers frequently to ensure they remain fresh and the bait is not depleted.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Bait containers
- E. Baits
- F. None of the Above

177. Baits have always been available, but roaches seemed to be indifferent to them. Although some roaches would feed and die, it was not likely that you would be able to _____ with baits alone. Now, we have products like Maxforce and Avert. These materials are deadly for roaches.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Control infestations
- E. Baits
- F. None of the Above

178. If you spray several properties or apartments and intend on doing a lot of baiting you should consider getting the _____. It uses the same Maxforce Gel in smaller cartridges which are loaded in the gun allowing for precise controlled applications and placements.

- A. Maxforce Bait Gun
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

179. They have been formulated with attractants which roaches cannot resist. You should be able to get complete control in homes, apartments and townhouses without having to do any _____. The advantage of these products is that you are able to apply them with a minimum of preparation.

- A. Spraying
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

180. If you are careful, you should be able to apply Maxforce without having to remove anything from cabinets. _____ comes in an aerosol can which enables you to deliver the bait deep in wall voids where the roaches are hiding. The amazing thing about these products is that roaches love them to death.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

181. In fact, roaches will ignore bait placements that have been made over treated surfaces, so make sure to apply Maxforce or Avert where you are certain _____ has been applied. In general, make your placements about 2 – 3 feet apart.

- A. Spray
- B. Avert
- C. No residual pesticide
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

182. In the average cabinet, you will need to make 6-8 placements with Maxforce. Since Maxforce comes out like toothpaste, it is difficult to penetrate voids with it. Use _____ for these hard to penetrate nest sites.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

183. Avert is a different flavor than _____ and when the two are used together, you will get the quickest results. This is achieved because you are offering the insects a variety of food.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

184. By having _____, the roaches are more likely to find one of the products. Since roaches will change their diet, having an option ensures they will find one if they don't like the other.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

Aerosols

185. Aerosol insecticides may or may not have _____.

- A. Spray power
- B. Residual activity
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides strength
- F. None of the Above

186. A non-residual spray alone may not provide a high degree of control, but when used with a _____, a high degree of control can be achieved.

- A. Spray
- B. Avert
- C. Dusts
- D. Residual spray or dust
- E. Aerosol insecticides
- F. None of the Above

187. _____ are useful for determining the location and extent of a cockroach infestation. Small amounts of pesticide applied to hidden areas and shelters force cockroaches to evacuate and move across previously treated surfaces.

- A. Sprays
- B. Avert
- C. Dusts
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

188. Residual aerosols should be used in the same manner as other types of _____.

- A. Sprays
- B. Residual sprays
- C. Dusts
- D. Residual aerosols
- E. Aerosol insecticides
- F. None of the Above

Inorganic insecticides

189. Boric acid and powders of _____ and diatomaceous earth are examples of inorganic insecticides that can be used effectively for cockroach control in homes.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

190. These _____ to humans and pets, and retain their effectiveness long after initial application. Usually, a longer period of time is required to achieve control, but reapplications are greatly reduced.

- A. Silica aero gel is safe
- B. Chemicals
- C. Boric acid is safe
- D. Non-residual aerosols are safe
- E. Chemicals are low in toxicity
- F. None of the Above

191. Apply boric acid, silica aero gel or _____ in a light film to cracks and crevices and other cockroach hiding places. Avoid applications to moist or damp areas, especially when using silica aero gel or diatomaceous earth.

- A. Silica aero gel
- B. Diatomaceous earth
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

192. If cockroaches become established, _____ may be needed in combination with good sanitary practices.

- A. Silica aero gel
- B. Chemical control
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

Insect Growth Regulators

193. Some synthetic _____ mimic natural hormones found in insects. When applied to cockroaches during their early developmental stages, they cause nymphs to molt into sterile adults.

- A. Compounds
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

194. _____ have low human toxicity, but have long residual effectiveness.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

195. For best results they must be applied along with residual insecticides to eliminate existing adults or other non-susceptible stages. Over-all population reduction with _____ usually takes several months.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

Trapping

196. Several types of _____ are commercially available. Traps capture roaches, and are a good monitoring device. While the traps can be useful to reduce light infestations, they do not effectively control heavy cockroach infestations.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Cockroach traps
- F. None of the Above

197. Place _____ against a vertical surface, preferably a corner, where cockroaches are usually found. They are most effective when placed under sinks, in cabinets, near the kitchen stove or refrigerator, in basement corners or near floor drains.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

Roach Traps

198. Regardless of the treatment method you choose, another tool which can be a great help when treating roach infestations is the _____.

- A. Silica aero gel
- B. Chemicals
- C. Use of Roach Traps
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

199. These rely on _____ to attract all types of roaches but they work particularly well for German and several of the large roach species.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Roach pheromones
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

200. Place them where roaches have been seen. The _____ will attract males ready to reproduce, females in search of nest sights (the odors emitted signal a roach gathering place or nest) and young roaches which are looking for a colony to mix and mingle.

- A. Silica aero gel
- B. Chemical
- C. Pheromones
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

You are finished with your assignment, please fax or e-mail a copy of your driver's license and the Answer Key and Registration form. Always call us the next day to ensure we received all your information.

Our e-mail is info@tlch2o.com our fax number is (928) 468-0675

Cockroach Control Assignment #3 For Students Names M-P

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 70 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 272-0747. This assignment is available to you in a Word Format on TLC's Website. You can find online assistance for this course on the in the Search function on Adobe Acrobat PDF to help find the answers. Once you have paid the course fee, you will be provided complete course support from Student Services (928) 468-0665.

Write your answers on the Answer Key found in the front of this assignment.

1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.
2. You will need to pick one of the following five assignments to complete. This selection process is based upon your last name. If your last name begins with an A to E, you will pick assignment number 1, if your last name begins with the letter F to L, you are to complete assignment number 2 and if your last name begins with the letter M-P, you will pick assignment number 3 and if your last name begins with the letter Q-S, you will pick assignment number 4, and if your last name begins with the letter T-Z, you will pick assignment number 5.

Multiple Choice, Please select one answer and mark it on the answer key. The answer must come from the course text. (s) Means answer can be plural or singular.

WHO MUST PROTECT WORKERS AND HANDLERS?

1. Employers are responsible for making sure that workers and handlers receive the protections required by the pesticide labeling and the WPS. The term "employer" has a special meaning in the WPS — you are _____ even though you are self-employed or use only members of your own family to do the work on your establishment.

- | | |
|---------------------|----------------------|
| A. Handler employer | D. An employer |
| B. Pesticide user | E. Exempt end-users |
| C. Crop Adviser | F. None of the Above |

2. The WPS has very specific definitions for two types of employers. WPS requirements apply only to _____ who meet those definitions.

- | | |
|---------------------|-------------------------|
| A. Handler employer | D. Pesticide applicator |
| B. Pesticide user | E. Exempt end-users |
| C. Employers | F. None of the Above |

WPS EMPLOYER DEFINITIONS

Worker Employers:

Worker employers are people who:

3. Employ or contract for the services of workers (including _____ and members of their family) for any type of compensation to perform tasks related to the production of agricultural plants.

- | | |
|--------------------------|----------------------|
| A. Handler employers | D. Themselves |
| B. Pesticide applicators | E. Exempt end-users |
| C. Crop Advisers | F. None of the Above |

4. Own or operate an agricultural establishment that uses such _____. (See definition of "owner".)

- | | |
|--------------------------|----------------------|
| A. Workers | D. Themselves |
| B. Pesticide applicators | E. Exempt end-users |
| C. Crop Advisers | F. None of the Above |

5. If you are a _____, you are responsible for providing your agricultural worker employees with the protections that the WPS requires for workers. (In the WPS itself, "worker employers" are called "agricultural employers.")

- A. Handler employer
- B. Crop Adviser
- C. Pesticide applicator
- D. Worker employer
- E. Exempt end-users
- F. None of the Above

Handler Employers:

Handler employers are people who:

6. Employ _____ (including members of their family), for any type of compensation, or

- A. Handler employer
- B. Pesticide handlers
- C. Crop Advisers
- D. Workers
- E. Exempt end-users
- F. None of the Above

7. If you are a handler employer, you are responsible for providing the _____ you employ with the protections that the WPS requires for handlers.

- A. Handler employer
- B. Pesticide workers
- C. Crop Advisers
- D. Pesticide handlers
- E. Exempt end-users
- F. None of the Above

If You Employ Supervisors You must:

8. Require them to make sure the _____ they supervise comply with the WPS and receive its protections.

- A. Handler employees
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

9. Give them enough information and directions about the WPS requirements to make sure that the _____ they supervise receive the protections required by the WPS.

- A. Handler employees
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

10. Tell them who is responsible for all actions necessary for compliance with the WPS. Even if you assign _____ to carry out the duties required by the WPS, you are responsible for making sure that all those duties are performed.

- A. An employee
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

General Duties of WPS

The general duties of the WPS require an agricultural employer or a pesticide handler-employer to:

11. Assure that each _____ subject to the standard receives the required protections.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

12. Assure that _____ subject to the standard is used in a manner consistent with the labeling of the pesticide, including the requirements in the standard.

- A. Agricultural employer
- B. Person
- C. Any pesticide
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

13. Provide sufficient information and directions to _____ or handler to assure that each worker or handler receives the required protection. The information and directions must specify which persons are responsible for actions required to comply with the standard.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Each person who supervises any worker
- F. None of the Above

14. Require each person who supervises any worker or handler to assure compliance by the worker or handler with the provisions of this standard and to assure that the _____ receives the required protection (40 CFR).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

15. The general duties also prohibit _____ from taking any retaliatory actions against workers attempting to comply with this standard, or from taking any action that prevents or discourages any worker or handler from complying or attempting to comply with the WPS.

- A. Agricultural employer
- B. Person
- C. Agricultural and handler employers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

Labeling

16. Requires everyone applying pesticides to _____ on the pesticide container's label.

- A. Obey instructions printed
- B. Decontaminate supplies
- C. Find emergency assistance
- D. Safely apply pesticides
- E. Wear personal protective equipment as noted
- F. None of the Above

Summary of WPS Requirements

17. _____ -- Applicators are prohibited from applying a pesticide in a way that will expose workers or other persons. Workers are excluded from areas while pesticides are being applied.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Protection during applications
- E. Personal protective equipment
- F. None of the Above

18. _____ must be specified on all agricultural plant pesticide product labels. Workers are excluded from entering a pesticide-treated area during the restricted-entry interval, with only narrow exceptions.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

19. _____ must be provided and maintained for handlers and early-entry workers.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

20. _____ -- Workers must be notified about treated areas so they may avoid inadvertent exposures.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Notification to workers
- F. None of the Above

21. _____ -- Handlers and workers must have an ample supply of water, soap, and towels for routine washing and emergency decontamination.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
22. _____ -- Transportation must be made available to a medical care facility if a worker or handler may have been poisoned or injured. Information must be provided about the pesticide to which the person may have been exposed.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
23. _____ Training is required for all workers and handlers, and a pesticide safety poster must be displayed.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
24. Access to labeling and site-specific information -- Handlers and workers must be informed of _____. Central posting of recent pesticide applications is required.
- A. Restricted-entry intervals D. Pesticide label requirements
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above

WHO DOES THE WPS PROTECT?

25. The WPS requires employers to take steps to protect two types of agricultural employees: _____.
- A. Worker and Agricultural employer D. Worker and/or handler
 B. Worker and Person E. Worker and Pesticide handler-employer
 C. Workers and Supervisors F. None of the Above
26. The terms “worker” and “pesticide handler” are defined very specifically in the WPS, and _____ who meet these definitions must comply with the WPS.
- A. Agricultural employer D. Worker and/or handler
 B. Employers of persons E. Pesticide handler-employer
 C. Workers F. None of the Above
27. Depending on the tasks being performed, you may need to provide the same _____ with worker protections on some occasions and pesticide handler protections on other occasions.
- A. Agricultural employer D. Worker and/or handler
 B. Person E. Pesticide handler-employer
 C. Employee F. None of the Above
28. _____ of agricultural establishments and members of their immediate family are exempt from many WPS requirements.
- A. Agricultural employer D. Worker and/or handler
 B. Person E. Pesticide handler-employer
 C. Workers F. None of the Above

WORKERS

29. A worker is anyone who: (1) is _____ for any type of compensation and (2) is doing tasks, such as harvesting, weeding, or watering, relating to the production of agricultural plants on a farm, forest, nursery, or greenhouse.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Employed (including self-employed)
- E. Pesticide handler-employer
- F. None of the Above

30. This term does not include persons who are employed by a commercial establishment to perform tasks as _____.

- A. Agricultural employer
- B. Crop advisors
- C. Workers
- D. Worker and/or handler
- E. Crop advisors
- F. None of the Above

PESTICIDE HANDLERS

31. A pesticide handler is anyone who: is employed (including self-employed) for any type of compensation by _____ or a commercial pesticide handling establishment that uses pesticides in the production of agricultural plants on a farm, forest, nursery, or greenhouse.

- A. Product labeling
- B. Use of soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

And is doing any of the following tasks:

32. Assisting with the _____, including incorporating the pesticide into the soil after the application has occurred.

- A. Product labeling
- B. Soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

33. Entering a greenhouse or other enclosed area after application and before the inhalation exposure level listed on the product labeling has been reached or one of the WPS ventilation criteria have been met to: – operate ventilation equipment, – _____, such as tarps, used in fumigation, or – check air concentration levels.

- A. Product labeling
- B. Adjust or remove coverings
- C. Restricted-entry interval
- D. Entering an agricultural establishment
- E. Application of pesticides
- F. None of the Above

34. Entering a treated area outdoors after _____ to adjust or remove soil coverings, such as tarpaulins.

- A. Product labeling
- B. Application of any soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

35. Performing tasks as a crop advisor: – during any pesticide application, – before any inhalation exposure level or ventilation criteria listed in the labeling has been reached or one of the WPS ventilation criteria has been met, – _____.

- A. Product labeling
- B. Soil fumigant
- C. During any restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

NOT A HANDLER

36. A person is not a _____ if he or she only handles pesticide containers that have been emptied or cleaned according to instructions on pesticide product labeling or, if the labeling has no such instructions, have been triple-rinsed or cleaned by an equivalent method, such as pressure rinsing.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

37. A person is not a _____ if he or she (1) is only handling pesticide containers that are unopened and (2) is not, at the same time, also doing any handling task (such as mixing or loading).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

38. You are not a _____ if you: purchase pesticides and transport them unopened to an establishment. Carry unopened containers into a pesticide storage facility. Transport unopened containers to the site where they are to be mixed, loaded, or applied.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

39. You are a _____ if you are loading unopened water-soluble packets into a mixing tank (because you are mixing and loading the pesticide).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

Four Basic Requirements of WPS

These regulations contain four basic requirements:

40. Workers are _____.
- A. Not allowed to drink pesticide(s)
 - B. To wear PPE
 - C. Allowed to preform handling activities
 - D. Not allowed in the restricted entry intervals (REI)
 - E. Not to be sprayed with pesticides
 - F. None of the Above

41. There are specific restricted entry intervals (REI) for 12 pesticides, _____ for certain pesticides, and a general re-entry interval for all other agricultural pesticides prohibiting re-entry into treated areas until sprays have dried, dusts have settled, and vapors have dispersed.

- A. Treated area
- B. Handling activity
- C. PPE specified
- D. Appropriate and timely
- E. Interim restrictive entry levels
- F. None of the Above

42. _____ is required for any worker entering a treated area before the specific re-entry period has expired.

- A. Treated area safety
- B. Handling activity rules
- C. Protective clothing
- D. Appropriate and timely instruction
- E. Handler employer relations
- F. None of the Above

43. " _____ " warnings are required for re-entry. These warnings may be given orally in appropriate language, placed on the pesticide notice board, or posted in the field.

- A. Treated area
- B. Handling activity
- C. PPE specified
- D. Appropriate and timely
- E. Handler employer
- F. None of the Above

Knowledge of Labeling Information

44. A handler employer must assure that handlers understand all of the labeling requirements related to safe use of pesticides before any handling activity takes place. The handler must also have access to the _____ during handling activities.

- A. Treated area
- B. Product labeling information
- C. PPE specified
- D. Appropriate and timely
- E. Handler employer
- F. None of the Above

Safe Operation of Equipment

45. A handler employer must assure that handlers are instructed in the _____ of all equipment they will be using.

- A. Treated area
- B. Handling activity
- C. PPE specified
- D. Appropriate and timely
- E. Safe operation
- F. None of the Above

46. It is the handler-employer's responsibility to assure that the equipment is working properly and to inform employees, when appropriate, that the equipment may be contaminated with pesticides and to explain _____.

- A. Handler employer safety
- B. Pesticide residues
- C. Display of information
- D. The correct way to handle such equipment
- E. Exempt end-users
- F. None of the Above

Personal Protective Equipment

47. Any person handling a pesticide must use the clothing and _____ on the label for product use.

- A. PPE specified
- B. Pesticide residues
- C. Display of information
- D. Pesticide
- E. Exempt end-users
- F. None of the Above

48. Characteristics of protective clothing and PPE are specified in the standard, as are exceptions to PPE specified on product labeling. The handler employer must take appropriate measures _____.

- A. Of handler employer
- B. Of pesticide residues
- C. For display of information
- D. To prevent heat-related illnesses
- E. To protect exempt end-users
- F. None of the Above

Decontamination

49. A _____ must provide a decontamination site (as specified in the standard) for washing off pesticides and pesticide residues during any handling activity.

- A. Handler employer
- B. Pesticide residue
- C. Display of information
- D. Pesticide
- E. Exempt end-user
- F. None of the Above

Emergency Assistance

50. A _____ must provide the same emergency assistance to handlers as discussed for workers.

- A. Handler employer
- B. Pesticide residues
- C. Display of information
- D. Pesticide
- E. Exempt end-users
- F. None of the Above

Brownbanded Cockroach

51. Both nymphs and adults of this species are _____ and can be distinguished easily by the presence of two angled or transverse bands across the base of the wings and abdomen.

- A. Black
- B. Red
- C. Light brown
- D. Internode
- E. Detritivore
- F. None of the Above

52. Adult males are 1/2 to 5/8 inch long; the female is slightly shorter. Though both have wings, only the _____ can fly.

- A. Male
- B. Female
- C. TV roaches
- D. Nymphs and adults
- E. Instars
- F. None of the Above

53. The _____ carries each egg capsule for only a day or two before attaching it to a protected surface.

- A. Adult males
- B. Female
- C. Ovipositor
- D. Dealates
- E. Phytotoxemia
- F. None of the Above

54. The egg capsules are usually _____, and most of the eggs hatch within 50 days.

- A. Diapause
- B. Cursorial
- C. Scutellum
- D. Deposited in clusters or rows
- E. Deposited in frass
- F. None of the Above

55. Approximately 5 to 18 egg capsules are produced per female, each containing 19 eggs. About 3 to 9 months are required to complete the _____.

- A. Diapause
- B. Estivation
- C. Metamorphosis
- D. Defoliate, defoliation
- E. Reproductive cycle
- F. None of the Above

56. _____ prefer a dry, warm environment. They are generally found on ceilings, high on walls, and in light switches, closets and furniture. In some places they are known as "TV roaches" because of their frequent presence in living-room furniture and appliances.

- A. Adult males
- B. Female
- C. TV roaches
- D. Nymphs and adults
- E. Reproductives
- F. None of the Above

57. The wings of _____ cover their abdomens, while the females' wings are shorter. The yellow bands across the back are more pronounced on nymphs than on adults.

- A. Adult males
- B. Female
- C. Ovipositor
- D. Nymphs and adults
- E. Dealates
- F. None of the Above

58. These cockroaches are quite active, and the adults, especially the males, fly rapidly when disturbed. Both _____ may jump to escape danger.

- A. Adult males
- B. Female
- C. Dealates
- D. Adults and nymphs
- E. Reproductives
- F. None of the Above

59. The _____ carries her egg capsule for only a day or two before gluing it to a protected surface underneath or inside furniture, in a closet or on the ceiling in a darkened room. They can also be found in televisions and other appliances.

- A. Adult female
- B. Detritivores
- C. Pedipalps
- D. Nymphs and adults
- E. Dealates
- F. None of the Above

60. Brownbanded cockroaches are more apt to be found in homes, apartments, hotels, motels, nursing homes and hospitals than in restaurants, grocery stores and other commercial establishments. They prefer starchy foods and appear to have lower water requirements than _____.

- A. American Cockroaches
- B. German cockroaches
- C. TV roaches
- D. Nymphs and adults
- E. Other cockroaches
- F. None of the Above

61. They can occupy drier locations within a building. _____ frequently are found on ceilings in dark or dimly lit rooms, behind picture frames, in light switches, in upper walls of cabinets and closets, or on undersides of furniture and inside upholstered furniture. Because brownbanded cockroaches are found in so many locations they may be more difficult to control.

- A. American Cockroaches
- B. German cockroaches
- C. TV roaches
- D. Nymphs and adults
- E. Other cockroaches
- F. None of the Above

American Cockroach (*Periplaneta americana*)

62. The American cockroach is the largest of the common species, growing to a length of 1 1/2 to 2 inches. It is reddish-brown with a light yellow band around the edge of the _____.

- A. Petiole
- B. Proboscis
- C. Head shield
- D. Exoskeleton
- E. Crepuscular
- F. None of the Above

63. Adults of both sexes have _____, but seldom fly. They are, however, capable of gliding flights.

- A. Pedipalps
- B. Forbs
- C. Imagoes
- D. Well-developed wings
- E. Pronotums
- F. None of the Above

64. _____ are smaller than adults, grayish-brown in color and less fully winged.

- A. Instars
- B. Female
- C. Imagoes
- D. Nymphs and adults
- E. Nymphal cockroaches
- F. None of the Above

65. The adult female usually drops her egg capsule within a day after it is formed. She often places the capsule near a food or water source or in a location where it can be covered with _____.

- A. Frass
- B. Endosperm
- C. Capsule
- D. Miscellaneous debris
- E. Poikilotherm
- F. None of the Above

66. Occasionally, she glues the capsule to some surface with secretions from her mouth. The capsule may be _____ in moist wood, in cracks in bark or in whorls of plants.

- A. Ovipositor
- B. Diapause
- C. Capsule
- D. Overwinter
- E. Deposited outdoors
- F. None of the Above

American Cockroach

67. _____ of this species are 1 1/2 to 2 inches long. They are the largest of all the cockroaches common in the World.

- A. Adult males
- B. Female
- C. Instars
- D. Adults
- E. Nymphal cockroaches
- F. None of the Above

68. Both _____ are shiny, reddish brown with a pale brown or yellow band around the edge of the head and back. The wings of both the male and female extend slightly beyond the body.

- A. Adult males
- B. Female
- C. Instars
- D. Nymphs and adults
- E. Male and female
- F. None of the Above

69. The female produces 15 to 90 egg capsules, each containing 14 to 16 eggs. Egg capsules are deposited near a _____ where the majority of eggs hatch within 60 days.

- A. Dactyl
- B. Internode
- C. Capsule
- D. Endosperm
- E. Scutellum
- F. None of the Above

70. The _____ is completed in 12 to 18 months.

- A. Overwinter
- B. Dealate
- C. Overwinter
- D. Defoliate, defoliation
- E. Reproductive cycle
- F. None of the Above

71. The _____ can survive 2 to 3 months without food and for a month without water.

- A. Adult
- B. Ovipositor
- C. Malformation
- D. Internode
- E. Nymphal cockroaches
- F. None of the Above

72. _____ are not typically found in homes; however, in commercial and industrial establishments they can be found in damp, warm basements, in furnace or boiler rooms, and storage rooms.

- A. Adult males
- B. Females
- C. Ovipositors
- D. Nymphs and adults
- E. American cockroaches
- F. None of the Above

73. Because of their preference for _____, they are notable as a problem in urban commercial districts.

- A. Finances
- B. Dry areas
- C. Food
- D. Heat
- E. Sewers and heat tunnels
- F. None of the Above

Oriental Cockroach

74. This dark reddish brown to black roach is commonly referred to as the "_____." It is considered the most repulsive of all of the roaches and has a strong odor.

- A. Roach
- B. Sewer bug
- C. Water bug
- D. Chinese roach
- E. Blackie
- F. None of the Above

75. The adult females are 1 1/4 inches long and _____.

- A. Carries an egg capsule
- B. Lives in sewer drains
- C. Has 8 legs
- D. Is a reproductive
- E. Almost wingless
- F. None of the Above

76. The _____ are 1 inch long and have wings that are about half as long as their body. Neither males nor females can fly or glide.

- A. Dealates
- B. Instars
- C. Nymphs
- D. Adult females
- E. Adult males
- F. None of the Above

77. The _____ carries an egg capsule for about 30 hours and then drops or attaches it to a protected surface near food. On average, a female produces eight egg capsules, each containing 16 eggs which hatch within 60 days.

- A. Dealates
- B. Nymphs
- C. Roach
- D. Reproductives
- E. Female
- F. None of the Above

78. The _____ of this roach is completed in 6 to 9 months.

- A. Egg capsule
- B. Mating
- C. Completion
- D. Reproductive cycle
- E. Life cycle
- F. None of the Above

79. _____ prefer damp, cool, dark areas. They are generally found in sewer drains, crawl space areas, basements, cellars, or on the first floor of buildings.

- A. Nymphs
- B. Roaches
- C. Water bugs
- D. Dealates
- E. Adult males
- F. None of the Above

80. Infestations by this roach are most frequently found during spring (_____) and fall (October). They may spend considerable time outdoors during warm weather.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

Wood Cockroach

81. This group of roaches causes occasional problems in homes and public places. They are seen in late _____, especially after rains.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

82. This roach is often confused with both adult American and _____. However, the wood roach is chestnut brown and has a dull white band around the edges of the head and back.

- A. Females
- B. Roaches
- C. Adults
- D. Oriental roaches
- E. One generation per year
- F. None of the Above

83. Adults are 1 to 1 1/4 inches long. _____ have wings covering only about half the body and do not fly. Males have wings longer than the body and are excellent fliers.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Instars
- F. None of the Above

84. Females produce about 30 egg capsules, each containing about 32 to 36 eggs. This roach completes _____.

- A. Her work
- B. Nymph stage
- C. Egg laying
- D. The life cycle
- E. One generation per year
- F. None of the Above

85. Wood cockroaches are usually found in wood piles, hollow trees or under loose bark. Buildings in wooded areas are prone to have problems with wood roaches during rainy periods. Although this roach prefers to live outside, _____ are attracted to light and may enter buildings. They are sometimes brought in along with firewood, but do not usually survive or multiply inside buildings.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Dealates
- F. None of the Above

86. The _____ is slightly more than 1 inch long and is a uniform, very dark brown to black. The head shield is a solid dark color.

- A. Females
- B. Roaches
- C. Adult
- D. Adult males
- E. Nymphs
- F. None of the Above

87. Both _____ have wings longer than their bodies and are capable of flying or gliding.

- A. Dealates and Instars
- B. Roaches
- C. Adults and Instars
- D. Nymphs and Adults
- E. Males and females
- F. None of the Above

88. Nymphs are smaller than adults and have only partially developed wings. _____ usually carry their egg capsules for a day or two before attaching them to the outside surfaces of buildings and other protected sites near the ground.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Adult females
- F. None of the Above

89. These _____ live primarily outdoors and prefer wood, leaf litter, trash piles and other humid sites with abundant organic matter. They also hide under rocks, ground cover and building materials. They may enter homes with infested firewood during seasonal migrations.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Cockroaches
- F. None of the Above

Habitat

90. The Smokybrown cockroach has a great tendency to lose moisture through the cuticle and thus requires water every two to three days. These requirements are important to remember when implementing your _____.

- A. Treatment
- B. Monitoring
- C. Penetration
- D. Control program
- E. Roach extermination program
- F. None of the Above

91. This pest is most likely found in areas which are protected, moist, dark, relatively warm and free from the _____. In nature, tree holes and the canopies of palm trees offer the ideal environment in which this bug can thrive.

- A. Pesticide
- B. Dry habitat
- C. Deep penetration
- D. Desiccating effects of air flow
- E. Treatment
- F. None of the Above

Control Smokybrown Cockroaches

92. Eliminate or alter any conditions which encourage the _____ of the roaches. These pests thrive in dark, humid areas which have little or no air flow.

- A. Life cycle
- B. Moist habitat
- C. Deeper penetration
- D. Presence and/or reproduction
- E. Removal and destroying hiding areas
- F. None of the Above

93. Spray exterior of structure with Suspend SC, Demon WP or Cynoff WP. These odorless insecticides will give a quick knockdown of bugs while lasting for several weeks, usually yielding about a _____.

- A. 90 day residual
- B. 10 day residual
- C. 1 inch penetration
- D. 30 day residual
- E. 50 day residual
- F. None of the Above

94. Spray any crack, crevice or entry point on the outside of the structure. This includes treating around all windows, doors, vents and in _____ of brick veneer. Also spray tree trunks, from ground to crotch of tree, but no higher than six feet.

- A. Areas
- B. Weep holes
- C. Deep penetration
- D. Areas roaches like to hide
- E. And outside
- F. None of the Above

95. All _____ should be sprayed with insecticide. These exterior surfaces should be treated 3 to 4 times each year.

- A. Interiors
- B. Moist habitats
- C. Mulched areas
- D. Grass and bushes
- E. Roaches
- F. None of the Above

96. If necessary, _____ in the following areas: basements, garages, carports, attics, closets, laundry rooms.

- A. Trap
- B. B and G
- C. C/C
- D. Dust
- E. Spray indoors
- F. None of the Above

97. Also treat beneath and behind large appliances (refrigerators, stoves, etc.) or other areas where these _____. (Spraying all of your baseboards with any bug spray is not necessary!)

- A. Thrive in the dark
- B. Have a moist habitat
- C. Penetrate
- D. Pests live
- E. Roaches prefer to hide
- F. None of the Above

98. Indoor areas should be treated _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. 2 to 3 times per year
- E. 1 to 2 times per year
- F. None of the Above

99. Hollow blocks or other areas such as behind brick walls and along plumbing lines should be treated with _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

100. Although many dusts will kill roaches, _____ is water-proof and will not be destroyed by the moist habitat of the Smokybrown as would other dusts.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

101. For deeper penetration and better distribution of insecticide dust, use a _____. Delta Dust should be used once each year or as needed.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

Asian Cockroach *Blattella asahinai*

102. The Asian cockroach was identified as a _____ to the United States in 1986 when a professional pest control operator collected these insects in Lakeland, Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. Newly introduced species
- F. None of the Above

103. He referred to them as German cockroaches, *Blattella germanica* (L.), but noted that their behavior was unlike any other _____ that he had previously encountered. Upon further investigation the cockroaches were found to be *B. asahinai*, Asian cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

Distribution and Habits

104. The Asian cockroach was first described in 1981 from insects collected on Okinawa Island, Japan. It is most likely that _____ was introduced into the United States through imports from Japan.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. *B. asahinai*
- E. Wood cockroach(es)
- F. None of the Above

105. Since the first identification of _____ in Lakeland (Polk County), it has been reported from Marion County in central Florida to Broward County in southwest Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. *B. asahinai*
- F. None of the Above

106. The primary habitat of the _____ is outdoors in shaded mulched or composted areas, such as landscaping and gardens, where fresh plant litter accumulates.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Water bug
- E. Wood cockroach(es)
- F. None of the Above

107. Populations of 30,000 to 250,000 insects per acre have been reported. Members of this species are strong fliers, unlike their close relative, the _____.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Polish cockroach
- E. Wood cockroach(es)
- F. None of the Above

108. They may invade structures but indoor infestations are rare occurrences. They become _____ and are attracted to light-colored surfaces and brightly lit areas.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Male tergal glands
- E. Indoor infestations
- F. None of the Above

109. _____ will take flight during the day if disturbed. The presence of this pest is obvious since their peak activity period coincides with our leisure time.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Males
- E. Indoor infestations
- F. None of the Above

Description

110. _____ are almost identical to German cockroaches. Chemical analysis by gas chromatography will confirm the species.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Wood cockroach(es)
- E. Indoor infestations
- F. None of the Above

111. However, there are also slight morphological differences between *B. asahinai* and *B. germanica*. _____ adults have longer and narrower wings than those of German cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Black
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

112. There are also differences between _____ in the shape of the male tergal glands.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Female tergal glands
- E. The species
- F. None of the Above

113. Asian cockroach females produce _____ and nymphs are smaller than that of German cockroaches.

- A. Females
- B. Roaches
- C. Adults
- D. Smaller egg capsules
- E. Wings
- F. None of the Above

114. Asian cockroach first instars have 23 antennal segments while German cockroach first instars have 24 to 25. Finally, margins of the abdomen and spots along the abdominal midsection of *B. asahinai* late instars _____, whereas those areas are lightly pigmented in *B. germanica*.

- A. Appear red
- B. Appear white
- C. Appear black
- D. Are small
- E. Are large
- F. None of the Above

Life Cycle

115. Female Asian cockroaches have a lifetime reproductive potential for producing approximately four egg capsules, each averaging _____.

- A. 137 nymphs
- B. 100 nymphs
- C. 37 nymphs
- D. 3700 nymphs
- E. 370 nymphs
- F. None of the Above

116. Immatures take approximately 67 days to reach adulthood. Females can then live for 104 days and males can live for _____.

- A. 49 days
- B. 49 weeks
- C. 49 years
- D. 149 days
- E. 490 days
- F. None of the Above

117. Females can produce their first egg capsule _____ after adult eclosion, and can drop another 20 days later.

- A. 23 days
- B. 33 days
- C. 3 days
- D. 10 days
- E. 13 days
- F. None of the Above

118. Adults are abundant _____ and again August through September. Nymphs predominate May through August.
- A. March to June
 - B. June and July
 - C. February through May
 - D. April and May
 - E. May or June
 - F. None of the Above

Management

119. _____ of Asian cockroaches is difficult due to their mobility and abundance of population sites.

- A. Typically treatment
- B. Control
- C. Tracking
- D. Management
- E. Numerous infestations
- F. None of the Above

120. Traditional treatments using _____ inside and around the perimeter of a structure are ineffective due to numerous infestations in mulched and wooded areas.

- A. Traps
- B. Control
- C. Dusts
- D. B and G
- E. Residual sprays
- F. None of the Above

121. Plus, adults enter homes through windows and doorways, avoiding areas typically treated for _____ of German cockroaches.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Numerous infestations
- F. None of the Above

122. Sodium vapor lamps for security lighting and yellow incandescent bulbs for porch lighting are both less attractive to adults and would thereby _____ of adult insects to lighting near buildings.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Reduce attraction
- F. None of the Above

123. Although Asian cockroaches are susceptible to all pesticides, toxic pelletized baits scattered outdoors have _____.

- A. Typically been treated
- B. Been controlled
- C. Been susceptible
- D. Are less attracted
- E. Provided the most reliable control
- F. None of the Above

124. The _____ for a pesticide or herbicide to enter the body are: inhalation, skin and eye contact, ingestion, and injection.

- A. Prevention techniques
- B. Basic cycle
- C. Basic routes
- D. Direction
- E. Methods
- F. None of the Above

125. The prevention of entry by one of these routes can be accomplished by control mechanisms such as engineering controls, personal protective equipment, and _____.

- A. Prevention
- B. Basic routes
- C. Safety
- D. Can be minimized
- E. Administrative controls
- F. None of the Above

126. Each route can be minimized by a variety of _____ depending on the hazard and operation.

- A. Prevention methods
- B. Basic routes
- C. Control measures
- D. Techniques
- E. Administrative controls
- F. None of the Above

Madagascar Giant Hissing Roaches

127. The cockroach family, to which Madagascar roaches belong, is among the most primitive of the winged insects. The nearest relatives to _____ include mantids, grass-hoppers, stick insects, and termites.

- A. Bees
- B. Cockroaches
- C. Winged insects
- D. Beetles
- E. Bed bugs
- F. None of the Above

128. There are at least 3,500 known species living today, in _____, most of which originate in the tropics.

- A. 500 genera
- B. 450 genera
- C. 400 genera
- D. On this planet
- E. USA
- F. None of the Above

129. As a group, cockroaches exhibit a _____ of sizes, colors, and habits.

- A. Diurnal
- B. Small diversity
- C. Commensally
- D. Wide diversity
- E. Cornucopia
- F. None of the Above

130. Although they have an infamous reputation as household pests, in reality only about half a dozen species (less than one percent of all known forms) have _____ with humans.

- A. Diurnal skills
- B. Exhibited hostility
- C. Made friends
- D. Negative associations
- E. Toxic relationships
- F. None of the Above

131. Many species are diurnal, some are _____, and others live in the ground or are wood-boring. Some, such as the Madagascar roach, do not have wings.

- A. Intellectual
- B. Semiaquatic
- C. Hostile
- D. Scavengers
- E. Toxic
- F. None of the Above

132. About a dozen or so species live _____ in the nests of ants, wasps, or termites.

- A. Diurnal
- B. Near and
- C. Commensally
- D. As scavengers outdoors near
- E. As friends
- F. None of the Above

133. There are also roach species that inhabit caves with bats or live in the desert. The majority of cockroaches in tropical countries exist as scavengers outdoors, feeding on vegetation and organic matter in _____.

- A. Their nests
- B. The tropics
- C. Dry areas
- D. Outdoors
- E. An apparently harmless fashion
- F. None of the Above

134. The toxicity of the Thailand and Middle-Asian cobra venoms as well as of their isolated components (_____ and some others) for cockroach *Gromphadorhina portentosa* was studied.

- A. Poisons
- B. Sugars
- C. Vapors
- D. Neurotoxins, cytotoxins, phospholipases
- E. Toxic
- F. None of the Above

135. It was found that, as compared to mammals, cockroaches are _____ to cobra venoms and their components.
- A. Diurnal
 - B. More resistant
 - C. Related
 - D. Scavengers
 - E. Toxic
 - F. None of the Above

Cockroach Management Strategies

Prevention

136. _____ of roach colonies can be prevented by close inspection of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.

- A. Entry and establishment
- B. Elimination
- C. Should not be left
- D. Avoid unnecessary control
- E. Developed resistance
- F. None of the Above

137. Caulking or puttying areas such as cracks and crevices around kitchen cabinets, bathtubs, water and plumbing pipes, cracks on floors and walls, and exterior windows and doors can eliminate most hiding places and _____.

- A. Cannot elevate growth
- B. Can eliminate
- C. Should not be left
- D. Help reduce the cockroach population
- E. Helps develop resistance
- F. None of the Above

138. Other structural modifications, such as weather stripping and pipe collars, also help to _____.

- A. Increase protection
- B. Can eliminate
- C. Kill the pests
- D. Avoid unnecessary growth
- E. Reduce cockroach entry and establishment
- F. None of the Above

Sanitation

139. Good housekeeping is the most important factor in preventing and _____.

- A. Cannot forgotten
- B. Elimination
- C. Should not be left
- D. Controlling cockroach populations
- E. Reducing resistance
- F. None of the Above

140. Cockroaches _____, water and shelter. Do not allow food particles to remain on shelves or floors.

- A. Cannot live without food
- B. Can eliminate
- C. Storage areas should not be left
- D. Avoid unnecessary food stuffs
- E. Have developed resistance
- F. None of the Above

141. Dishes should not be left unwashed after a meal, particularly overnight. Clean areas under refrigerators, stoves, sinks and furniture regularly to remove bits of food that have accumulated. If pets are fed indoors, _____, especially overnight. Store pet food in tight containers, and clean litter boxes frequently.

- A. Use baits
- B. Use dusts
- C. Should not be left
- D. Avoid unnecessary food
- E. Teach pets to deal with the cockroaches
- F. None of the Above

142. Keep all food items covered or in a refrigerator at all times between uses. Empty garbage and _____ and keep refuse in a covered container away from the residence.

- A. Burn it
- B. Eliminate extra humans
- C. Should not be left
- D. Avoid unnecessary
- E. Develop control methods
- F. None of the Above

143. If possible, _____. Common sources include leaking faucets and pipes, drains, toilet tanks, wash basins and sink traps, aquaria and water-filled tubs. Pets' water dishes, beverage bottles or cartons, and pipe condensation can provide an adequate water supply for roaches. Roach breeding is encouraged by clutter.

- A. Move
- B. Use dusts
- C. Call pest control
- D. Avoid unnecessary outdoor activities
- E. Use DDT
- F. None of the Above

144. Avoid unnecessary storage of corrugated paper boxes, piles of paper bags, newspaper, magazines, and _____.

- A. Concrete
- B. Beer
- C. Boric acid
- D. Metal
- E. Motor oil
- F. None of the Above

Chemical Control

145. Cockroaches have been the target of many insecticides over the years but they have _____ to several of them.

- A. Cannot escape
- B. Eliminated
- C. Evolved
- D. Learned to avoid eating
- E. Developed resistance
- F. None of the Above

146. Attempts to use pheromones as sex lures or to sterilize male cockroaches have thus far not _____ on a large scale.

- A. Proved practical
- B. Worked
- C. Impressed
- D. Proved cost effective
- E. Developed resistance
- F. None of the Above

147. _____ such as diatomaceous earth to penetrate their protective cuticles may work in individual households as a nonpoisonous alternative.

- A. Dusts
- B. Salts
- C. Sprinkling abrasives
- D. Avoid unnecessary dusting
- E. Spraying pesticides
- F. None of the Above

148. Once the cuticle is abraded, the roaches die of dehydration. Also effective is _____, which is both abrasive and poisonous to cockroaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Boric acid powder
- F. None of the Above

149. _____ cockroaches from multiplying is to keep a clean house and block their access to water, which they need to survive.

- A. Crack and crevice or C/C
- B. Drione Dust will control
- C. Application of pesticide to
- D. The best way to prevent
- E. Crusader Hand Dust will kill
- F. None of the Above

150. American cockroaches are very easy to keep and rear in the laboratory and make excellent subjects for experimentation because of their large size and _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Treatment Methods

151. The disadvantage is that the treatments need to be where the roaches are hiding. Cockroaches have been seen thriving less than a foot away from _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. A treated surface
- F. None of the Above

152. Their path of feeding and moving to and from shelter never crossed the _____. This enabled them to live virtually on top of treated areas and yet still survive.

- A. Crack and crevice or C/C
- B. Treated surfaces
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Cracks and Crevice

153. When roaches began to build resistance to chemicals and manufacturers designed their products with less volatility, new packaging and treatment techniques became necessary. These new trends became known as "_____".

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

154. Basically, _____ means applying the chemical into the cracks and crevices suspected of harboring roaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

155. There are two types of products commonly used for this purpose: _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

156. In fact, a good pest control technician should be able to get roach control with nothing more than _____ if he or she knows where to do the application.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust
- E. Crusader Hand Duster
- F. None of the Above

157. _____ has solved many roach problems. Apply it in cracks and crevices, behind cabinets and major appliances, in wall voids and electric outlets.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

158. This requires a lot of work and this product can be messy to work with, but provides the _____ when used properly.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

159. Use a _____ for the application. Since dust can be messy to work with, aerosol products became popular throughout the 1980's.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

160. The professional line of products which is discussed are truly effective and not commonly available. Their _____ are effective because insects have not been able to build resistance.

- A. Crack and crevice or C/C
- B. Active ingredients
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

161. There are several stories of super roaches and the fact that "even the bugman" couldn't get rid of "my" roaches, but what it all boils down to is the _____ and the choice of product. If the products used are the ones as mentioned above and the treatment is thorough and complete, there is little chance of any roach surviving nor of re-infestation.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

162. Most insects, certainly roaches, cannot live where _____ has been applied. That being said, all you need to do is apply it wherever roaches want to be. This process of eliminating their nest sights eliminates their population.

- A. Crack and crevice or C/C
- B. Drione
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

163. The reason they appear to be "resistant" in most cases is that they are simply avoiding treated areas. This can happen when products are mixed at higher rates or when applicators fall victim to treating the same areas over and over again. The roaches which survive all these _____ are the ones which are going where the applicator has failed to treat.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Applications
- F. None of the Above

164. Today, these problems have been all but eliminated with the _____. These new methods are both safer and easier to do.

- A. Crack and crevice or C/C
- B. Latest treating methods
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

165. Although _____ has long been the main method to get roach control, baiting has become a legitimate method as new baits hit the market. These products have been tested and proven effective.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Spraying
- F. None of the Above

Residual Sprays

166. These formulations are oil-based or water-based emulsions and water-based suspensions (_____). They are available in ready-to-use pressurized containers or non-pressurized containers with built-in spray pumps.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

167. _____ also can be purchased as concentrates to mix with water before applying with a compressed-air sprayer, plunger-type sprayer or paint brush.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

168. Be careful when using _____; they may stain, dull or damage certain floor tiles, linoleum, painted surfaces, plaster, plastics, houseplants, carpets and carpet backing.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

169. _____ can create a fire hazard when used near an open flame (pilot lights, gas stoves, furnaces). Water emulsions may stain wallpaper, light-colored carpets, draperies or other materials.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

170. They can short out electrical circuits, and are inferior to _____ on impervious surfaces such as glass or metal.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

171. _____ must be frequently agitated in the spray tank, but they leave the most active residues, especially on porous surfaces such as unpainted wood, mortar or concrete block.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

172. _____ are generally easy and fast to apply. The spray should wet or dampen the treated surface; do not allow spray to puddle or run off. When treating for cockroaches, pay particular attention to cracks and crevices. Exposed surfaces, especially those used to prepare foods, should usually not be treated with sprays.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

Dusts

173. _____ sometimes suffices as the only treatment for cockroaches, but is most often a supplemental treatment.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Insecticide dust
- F. None of the Above

174. _____ generally have longer residual action than sprays, but are ineffective if they become damp.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

175. Dusts are useful in cockroach control because they can be placed deep in cracks, crevices and wall voids; under refrigerators and furniture; around pipes, tunnels and conduits; on very smooth or very rough surfaces; and in other places not treatable with _____.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Other formulations
- F. None of the Above

176. Do not use dusts for treating large surfaces because they leave unsightly deposits. Also, cockroaches avoid _____ and will not walk through thick layers of the material.

- A. Residual sprays
- B. Wettable powders
- C. Heavy deposits
- D. Oil-based
- E. Baits
- F. None of the Above

177. Use light pressure on the application device to minimize the amount of dust in living areas. Apply _____ as light, even residues that are barely visible.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

Baits

178. Several cockroach _____ are sold in ready-to use containers. They also can be made using a combination of food attractants and a toxicant. If cockroaches will not feed on the bait, the insecticide has no effect.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

179. Thus, it is important not to contaminate stored _____ with organic solvents, other insecticides, fungicides and fertilizers.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Bait
- F. None of the Above

180. Baits are usually long lasting and often work well in areas that cannot be effectively sprayed or dusted. _____ are often most useful when used in conjunction with a residual spray or dust.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

181. _____ give best results in buildings where there are few alternative food supplies.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

182. Always use a sufficient number of _____ to adequately treat an area where cockroaches are to be controlled. Examine the bait containers frequently to ensure they remain fresh and the bait is not depleted.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Bait containers
- E. Baits
- F. None of the Above

183. Baits have always been available, but roaches seemed to be indifferent to them. Although some roaches would feed and die, it was not likely that you would be able to _____ with baits alone. Now, we have products like Maxforce and Avert. These materials are deadly for roaches.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Control infestations
- E. Baits
- F. None of the Above

184. If you spray several properties or apartments and intend on doing a lot of baiting you should consider getting the _____. It uses the same Maxforce Gel in smaller cartridges which are loaded in the gun allowing for precise controlled applications and placements.

- A. Maxforce Bait Gun
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

185. They have been formulated with attractants which roaches cannot resist. You should be able to get complete control in homes, apartments and townhouses without having to do any _____. The advantage of these products is that you are able to apply them with a minimum of preparation.

- A. Spraying
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

186. If you are careful, you should be able to apply Maxforce without having to remove anything from cabinets. _____ comes in an aerosol can which enables you to deliver the bait deep in wall voids where the roaches are hiding. The amazing thing about these products is that roaches love them to death.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

187. In fact, roaches will ignore bait placements that have been made over treated surfaces, so make sure to apply Maxforce or Avert where you are certain _____ has been applied. In general, make your placements about 2 – 3 feet apart.

- A. Spray
- B. Avert
- C. No residual pesticide
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

188. In the average cabinet, you will need to make 6-8 placements with Maxforce. Since Maxforce comes out like toothpaste, it is difficult to penetrate voids with it. Use _____ for these hard to penetrate nest sites.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

189. Avert is a different flavor than _____ and when the two are used together, you will get the quickest results. This is achieved because you are offering the insects a variety of food.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

190. By having _____, the roaches are more likely to find one of the products. Since roaches will change their diet, having an option ensures they will find one if they don't like the other.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

Aerosols

191. Aerosol insecticides may or may not have _____.

- A. Spray power
- B. Residual activity
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides strength
- F. None of the Above

192. A non-residual spray alone may not provide a high degree of control, but when used with a _____, a high degree of control can be achieved.

- A. Spray
- B. Avert
- C. Dusts
- D. Residual spray or dust
- E. Aerosol insecticides
- F. None of the Above

193. _____ are useful for determining the location and extent of a cockroach infestation. Small amounts of pesticide applied to hidden areas and shelters force cockroaches to evacuate and move across previously treated surfaces.

- A. Sprays
- B. Avert
- C. Dusts
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

194. Residual aerosols should be used in the same manner as other types of _____.

- A. Sprays
- B. Residual sprays
- C. Dusts
- D. Residual aerosols
- E. Aerosol insecticides
- F. None of the Above

Inorganic insecticides

195. Boric acid and powders of _____ and diatomaceous earth are examples of inorganic insecticides that can be used effectively for cockroach control in homes.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

196. These _____ to humans and pets, and retain their effectiveness long after initial application. Usually, a longer period of time is required to achieve control, but reapplications are greatly reduced.

- A. Silica aero gel is safe
- B. Chemicals
- C. Boric acid is safe
- D. Non-residual aerosols are safe
- E. Chemicals are low in toxicity
- F. None of the Above

197. Apply boric acid, silica aero gel or _____ in a light film to cracks and crevices and other cockroach hiding places. Avoid applications to moist or damp areas, especially when using silica aero gel or diatomaceous earth.

- A. Silica aero gel
- B. Diatomaceous earth
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

198. If cockroaches become established, _____ may be needed in combination with good sanitary practices.

- A. Silica aero gel
- B. Chemical control
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

Insect Growth Regulators

199. Some synthetic _____ mimic natural hormones found in insects. When applied to cockroaches during their early developmental stages, they cause nymphs to molt into sterile adults.

- A. Compounds
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

200. _____ have low human toxicity, but have long residual effectiveness.
- A. Silica aero gel
 - B. Chemicals
 - C. Boric acid
 - D. Insect growth regulators or (IGRs)
 - E. Monitoring device(s) or Trap(s)
 - F. None of the Above

You are finished with your assignment, please fax or e-mail a copy of your driver's license and the Answer Key and Registration form. Always call us the next day to ensure we received all your information.

Our e-mail is info@tlch2o.com our fax number is (928) 468-0675

Cockroach Control Assignment #4 For Students Names Q-S

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 70 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 272-0747. This assignment is available to you in a Word Format on TLC's Website. You can find online assistance for this course on the in the Search function on Adobe Acrobat PDF to help find the answers. Once you have paid the course fee, you will be provided complete course support from Student Services (928) 468-0665.

Write your answers on the Answer Key found in the front of this assignment.

1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.
2. You will need to pick one of the following five assignments to complete. This selection process is based upon your last name. If your last name begins with an A to E, you will pick assignment number 1, if your last name begins with the letter F to L, you are to complete assignment number 2 and if your last name begins with the letter M-P, you will pick assignment number 3 and if your last name begins with the letter Q-S, you will pick assignment number 4, and if your last name begins with the letter T-Z, you will pick assignment number 5.

Multiple Choice, Please select one answer and mark it on the answer key. The answer must come from the course text. (s) Means answer can be plural or singular.

General Duties of WPS

The general duties of the WPS require an agricultural employer or a pesticide handler-employer to:

1. Assure that each _____ subject to the standard receives the required protections.
A. Agricultural employer D. Worker and/or handler
B. Person E. Pesticide handler-employer
C. Workers F. None of the Above
2. Assure that _____ subject to the standard is used in a manner consistent with the labeling of the pesticide, including the requirements in the standard.
A. Agricultural employer D. Worker and/or handler
B. Person E. Pesticide handler-employer
C. Any pesticide F. None of the Above
3. Provide sufficient information and directions to _____ or handler to assure that each worker or handler receives the required protection. The information and directions must specify which persons are responsible for actions required to comply with the standard.
A. Agricultural employer D. Worker and/or handler
B. Person E. Each person who supervises any worker
C. Workers F. None of the Above
4. Require each person who supervises any worker or handler to assure compliance by the worker or handler with the provisions of this standard and to assure that the _____ receives the required protection (40 CFR).
A. Agricultural employer D. Worker and/or handler
B. Person E. Pesticide handler-employer
C. Workers F. None of the Above

5. The general duties also prohibit _____ from taking any retaliatory actions against workers attempting to comply with this standard, or from taking any action that prevents or discourages any worker or handler from complying or attempting to comply with the WPS.

- A. Agricultural employer
- B. Person
- C. Agricultural and handler employers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

Labeling

6. Requires everyone applying pesticides to _____ on the pesticide container's label.

- A. Obey instructions printed
- B. Decontaminate supplies
- C. Find emergency assistance
- D. Safely apply pesticides
- E. Wear personal protective equipment as noted
- F. None of the Above

Summary of WPS Requirements

7. _____ -- Applicators are prohibited from applying a pesticide in a way that will expose workers or other persons. Workers are excluded from areas while pesticides are being applied.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Protection during applications
- E. Personal protective equipment
- F. None of the Above

8. _____ must be specified on all agricultural plant pesticide product labels. Workers are excluded from entering a pesticide-treated area during the restricted-entry interval, with only narrow exceptions.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

9. _____ must be provided and maintained for handlers and early-entry workers.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

10. _____ -- Workers must be notified about treated areas so they may avoid inadvertent exposures.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Notification to workers
- F. None of the Above

11. _____ -- Handlers and workers must have an ample supply of water, soap, and towels for routine washing and emergency decontamination.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

12. _____ -- Transportation must be made available to a medical care facility if a worker or handler may have been poisoned or injured. Information must be provided about the pesticide to which the person may have been exposed.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

13. _____ Training is required for all workers and handlers, and a pesticide safety poster must be displayed.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

14. Access to labeling and site-specific information -- Handlers and workers must be informed of _____. Central posting of recent pesticide applications is required.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Pesticide label requirements
- E. Personal protective equipment
- F. None of the Above

WHO DOES THE WPS PROTECT?

15. The WPS requires employers to take steps to protect two types of agricultural employees: _____.

- A. Worker and Agricultural employer
- B. Worker and Person
- C. Workers and Supervisors
- D. Worker and/or handler
- E. Worker and Pesticide handler-employer
- F. None of the Above

16. The terms "worker" and "pesticide handler" are defined very specifically in the WPS, and _____ who meet these definitions must comply with the WPS.

- A. Agricultural employer
- B. Employers of persons
- C. Workers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

17. Depending on the tasks being performed, you may need to provide the same _____ with worker protections on some occasions and pesticide handler protections on other occasions.

- A. Agricultural employer
- B. Person
- C. Employee
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

18. _____ of agricultural establishments and members of their immediate family are exempt from many WPS requirements.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

WORKERS

19. A worker is anyone who: (1) is _____ for any type of compensation and (2) is doing tasks, such as harvesting, weeding, or watering, relating to the production of agricultural plants on a farm, forest, nursery, or greenhouse.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Employed (including self-employed)
- E. Pesticide handler-employer
- F. None of the Above

20. This term does not include persons who are employed by a commercial establishment to perform tasks as _____.

- A. Agricultural employer
- B. Crop advisors
- C. Workers
- D. Worker and/or handler
- E. Crop advisors
- F. None of the Above

PESTICIDE HANDLERS

21. A pesticide handler is anyone who: is employed (including self-employed) for any type of compensation by _____ or a commercial pesticide handling establishment that uses pesticides in the production of agricultural plants on a farm, forest, nursery, or greenhouse.

- A. Product labeling
- B. Use of soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

And is doing any of the following tasks:

22. Assisting with the _____, including incorporating the pesticide into the soil after the application has occurred.

- A. Product labeling
- B. Soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

23. Entering a greenhouse or other enclosed area after application and before the inhalation exposure level listed on the product labeling has been reached or one of the WPS ventilation criteria have been met to: – operate ventilation equipment, – _____, such as tarps, used in fumigation, or – check air concentration levels.

- A. Product labeling
- B. Adjust or remove coverings
- C. Restricted-entry interval
- D. Entering an agricultural establishment
- E. Application of pesticides
- F. None of the Above

24. Entering a treated area outdoors after _____ to adjust or remove soil coverings, such as tarpaulins.

- A. Product labeling
- B. Application of any soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

25. Performing tasks as a crop advisor: – during any pesticide application, – before any inhalation exposure level or ventilation criteria listed in the labeling has been reached or one of the WPS ventilation criteria has been met, – _____.

- A. Product labeling
- B. Soil fumigant
- C. During any restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

NOT A HANDLER

26. A person is not a _____ if he or she only handles pesticide containers that have been emptied or cleaned according to instructions on pesticide product labeling or, if the labeling has no such instructions, have been triple-rinsed or cleaned by an equivalent method, such as pressure rinsing.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

27. A person is not a _____ if he or she (1) is only handling pesticide containers that are unopened and (2) is not, at the same time, also doing any handling task (such as mixing or loading).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

28. You are not a _____ if you: purchase pesticides and transport them unopened to an establishment. Carry unopened containers into a pesticide storage facility. Transport unopened containers to the site where they are to be mixed, loaded, or applied.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

29. You are a _____ if you are loading unopened water-soluble packets into a mixing tank (because you are mixing and loading the pesticide).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

Four Basic Requirements of WPS

These regulations contain four basic requirements:

30. Workers are _____.

- A. Not allowed to drink pesticide(s)
- B. To wear PPE
- C. Allowed to preform handling activities
- D. Not allowed in the restricted entry intervals (REI)
- E. Not to be sprayed with pesticides
- F. None of the Above

31. There are specific restricted entry intervals (REI) for 12 pesticides, _____ for certain pesticides, and a general re-entry interval for all other agricultural pesticides prohibiting re-entry into treated areas until sprays have dried, dusts have settled, and vapors have dispersed.

- A. Treated area
- B. Handling activity
- C. PPE specified
- D. Appropriate and timely
- E. Interim restrictive entry levels
- F. None of the Above

32. _____ is required for any worker entering a treated area before the specific re-entry period has expired.

- A. Treated area safety
- B. Handling activity rules
- C. Protective clothing
- D. Appropriate and timely instruction
- E. Handler employer relations
- F. None of the Above

33. " _____ " warnings are required for re-entry. These warnings may be given orally in appropriate language, placed on the pesticide notice board, or posted in the field.

- A. Treated area
- B. Handling activity
- C. PPE specified
- D. Appropriate and timely
- E. Handler employer
- F. None of the Above

Knowledge of Labeling Information

34. A handler employer must assure that handlers understand all of the labeling requirements related to safe use of pesticides before any handling activity takes place. The handler must also have access to the _____ during handling activities.

- A. Treated area
- B. Product labeling information
- C. PPE specified
- D. Appropriate and timely
- E. Handler employer
- F. None of the Above

Safe Operation of Equipment

35. A handler employer must assure that handlers are instructed in the _____ of all equipment they will be using.

- A. Treated area
- B. Handling activity
- C. PPE specified
- D. Appropriate and timely
- E. Safe operation
- F. None of the Above

36. It is the handler-employer's responsibility to assure that the equipment is working properly and to inform employees, when appropriate, that the equipment may be contaminated with pesticides and to explain_____.

- A. Handler employer safety
- B. Pesticide residues
- C. Display of information
- D. The correct way to handle such equipment
- E. Exempt end-users
- F. None of the Above

Personal Protective Equipment

37. Any person handling a pesticide must use the clothing and _____ on the label for product use.

- A. PPE specified
- B. Pesticide residues
- C. Display of information
- D. Pesticide
- E. Exempt end-users
- F. None of the Above

38. Characteristics of protective clothing and PPE are specified in the standard, as are exceptions to PPE specified on product labeling. The handler employer must take appropriate measures_____.

- A. Of handler employer
- B. Of pesticide residues
- C. For display of information
- D. To prevent heat-related illnesses
- E. To protect exempt end-users
- F. None of the Above

Decontamination

39. A _____ must provide a decontamination site (as specified in the standard) for washing off pesticides and pesticide residues during any handling activity.

- A. Handler employer
- B. Pesticide residue
- C. Display of information
- D. Pesticide
- E. Exempt end-user
- F. None of the Above

Emergency Assistance

40. A _____ must provide the same emergency assistance to handlers as discussed for workers.

- A. Handler employer
- B. Pesticide residues
- C. Display of information
- D. Pesticide
- E. Exempt end-users
- F. None of the Above

Label Requirements

41. When these requirements appear on pesticide labels, all end-users must meet them unless exempt. Exempt end-users should voluntarily obey the requirements because of the dangers of _____.

- A. Pesticide exposure
- B. Pesticide residues
- C. Display of information
- D. Pesticide
- E. Exempt end-users
- F. None of the Above

42. _____ are intended to eliminate exposure to pesticides and to inform employees about the occupational hazards of pesticides. These require employers to make sure that employees are provided with:

- A. Handler employer
- B. Pesticide residues
- C. Display of information
- D. Pesticide
- E. Generic requirements
- F. None of the Above

43. _____ at a central location (WPS safety poster, the location of emergency medical facilities, and a list of recent pesticide applications).

- A. Instruction
- B. Notice
- C. Generic requirements
- D. Special application
- E. Display of information
- F. None of the Above

44. _____ exchanges between employers of agricultural workers and employers of commercial (for-hire) pesticide applicators.
- A. Instruction D. Special application
 B. Details of information E. Monitoring of handlers
 C. Generic requirements F. None of the Above
45. _____ about pesticide applications and information about pesticides used.
- A. Instruction D. Special application
 B. Notice E. Monitoring of handlers
 C. Generic requirements F. None of the Above
46. _____ of handlers who are using highly toxic pesticides.
- A. Instruction D. Special application
 B. Notice E. Monitoring
 C. Generic requirements F. None of the Above
47. Instruction on equipment safety, including _____.
- A. Instruction D. Special application
 B. Inspection and maintenance E. Monitoring of handlers
 C. Generic requirements F. None of the Above
48. _____ on the cleaning, inspection, and maintenance of PPE.
- A. Instruction D. Special application
 B. Notice E. Monitoring of handlers
 C. Generic requirements F. None of the Above
49. _____ for handlers, including labeling information and safe operation of application equipment.
- A. Instruction D. Special application
 B. Notice E. Special instructions
 C. Generic requirements F. None of the Above
50. _____ restrictions in nurseries and greenhouses.
- A. Instruction D. Special application
 B. Notice E. Monitoring of handlers
 C. Generic requirements F. None of the Above

Common Pest Cockroaches

51. Common pest cockroaches include the American, German, Oriental, Madeira, and _____.
- A. Asian D. Brown-banded
 B. American E. Oriental
 C. Madeira F. None of the Above
52. The _____ cockroach began to cause concern in the United States when it appeared in large numbers in Florida in the late 1980s.
- A. Asian D. German
 B. American E. Oriental
 C. Madeira F. None of the Above
53. All but the _____ cockroach are introduced species to North America.
- A. Asian D. German
 B. American E. Oriental
 C. Madeira F. None of the Above

Life Cycle

54. All roaches have _____ in their life cycle -- egg, nymph (young) and adult.

- A. Ootheca
- B. Imago
- C. Pedipalps
- D. Internode
- E. Three stages
- F. None of the Above

55. Females carry a bean-shaped egg capsule (_____) which is full of eggs. The newly emerged nymphs are identical to their parents except for their smaller size and lack of wings.

- A. Ootheca
- B. Imago
- C. Pedipalps
- D. Internode
- E. Three stages
- F. None of the Above

56. The _____ grow into adults by periodically shedding their skins, and may appear white for a few hours until their new skin darkens.

- A. Detritivore
- B. Nymphs
- C. Malformation
- D. Dealates
- E. Instar
- F. None of the Above

Live Everywhere

57. Cockroaches can be present in almost any _____. They move quickly and are especially active at night.

- A. Home
- B. Inside household goods
- C. Business
- D. Place inhabited by humans
- E. Area
- F. None of the Above

58. Characteristically, most roaches _____ or between surfaces that provide darkness and cover. Inside buildings, roaches move freely between rooms or adjoining apartments using wall spaces, plumbing and other utility installations.

- A. Live in cracks and crevices
- B. Breed in cracks and crevices
- C. Die in cracks and crevices
- D. Molt in cracks and crevices
- E. Hide in cracks and crevices
- F. None of the Above

59. They _____ in food and beverage boxes, grocery sacks, animal food and other household goods.

- A. Cause allergens
- B. Love to eat
- C. Are especially active at night
- D. Reject pesticides
- E. Can be carried into structures
- F. None of the Above

60. Cockroaches can eat almost anything, but they are especially partial to starchy foods and meat products. They feed on such diverse items as cereals, pastries, chocolate, milk products, beverages, cooked potatoes, glue, _____, wall paper, animal food, fresh or dried blood, excrement, dead animals and leather products.

- A. Allergens
- B. Book bindings
- C. Bait Gel
- D. Vegetables
- E. Starchy foods and meat products
- F. None of the Above

Damage

61. Disease Transmission. Cockroaches can carry _____ that cause human diseases, including food poisoning, dysentery and diarrhea. However, roaches have not been associated with serious disease outbreaks in the United States.

- A. Allergen(s)
- B. Organisms
- C. Repulsive odor
- D. Germs
- E. Pathogen(s)
- F. None of the Above

Allergy

62. Roaches can cause _____ in some people. The response is caused by roach "allergen" that is ingested with contaminated food or inhaled when dried fecal particles and fragments of ground-up bodies of dead roaches are mixed with house dust.
- A. Allergens
 - B. Mutations
 - C. Allergic reactions
 - D. Considerable psychological or emotional distress
 - E. Disease
 - F. None of the Above

Anxiety

63. The _____ of cockroaches can cause considerable psychological or emotional distress in some individuals.
- A. Sight
 - B. Odor
 - C. Smell
 - D. Considerable psychological or emotional distress
 - E. Long lasting view
 - F. None of the Above

64. Cockroaches usually do not bite, but their heavy leg spines _____.
- A. Will poke
 - B. May scratch
 - C. Have sharp edges
 - D. Will cause considerable psychological or emotional distress
 - E. Are not a threat
 - F. None of the Above

Scientific Classification

65. Cockroaches make up the order Blattodea, which contains _____.
- A. Family Blattidae
 - B. Madeira cockroach
 - C. Cryptocercidae
 - D. Five families
 - E. Gromphadorina portentosa
 - F. None of the Above

66. The American cockroach is _____, and the Oriental cockroach is *Blatta orientalis*, both in the family Blattidae.
- A. Family Blattidae
 - B. Madeira cockroach
 - C. *Periplaneta americana*
 - D. *Blatella germanica*
 - E. *Gromphadorina portentosa*
 - F. None of the Above

67. The German cockroach, *Blatella germanica*, the Asian cockroach, _____, and the brownbanded cockroach, *Supella longipalpa*, are in the family Blatellidae.
- A. Family Blattidae
 - B. Madeira cockroach
 - C. Cryptocercidae
 - D. *Blatella germanica*
 - E. *Blatella asahinai*
 - F. None of the Above

68. The Madeira cockroach is *Leucophaea maderae*, the Brazilian cockroach is *Blaberus giganteus*, and the Madagascar hissing cockroach is _____, all in the family Blaberidae.
- A. Family Blattidae
 - B. Madeira cockroach
 - C. Cryptocercidae
 - D. *Blatella germanica*
 - E. *Gromphadorina portentosa*
 - F. None of the Above

69. The remaining families are the Cryptocercidae and the _____.
- A. Family Blattidae
 - B. Madeira cockroach
 - C. Cryptocercidae
 - D. *Blatella germanica*
 - E. Polyphagidae
 - F. None of the Above

70. There are 55 species of _____ in the United States, but only five of these are troublesome in the most States.
- A. Family Blattidae
 - B. Madeira cockroach
 - C. Cryptocercidae
 - D. *Blatella germanica*
 - E. Cockroaches
 - F. None of the Above

German Cockroach

71. The German cockroach is the most common and the most difficult to control. Both adults and nymphs are _____ and have two longitudinal dark lines on their thorax (back).

- A. General in appearance
- B. Instars
- C. Light brown
- D. Have two longitudinal dark lines on their thorax (back)
- E. Black
- F. None of the Above

72. Adults are 1/2 to 3/4 inch long, and both males and females have _____ as long as the body.

- A. Antennas
- B. Wings
- C. Eggs
- D. Two longitudinal dark lines on their thorax (back)
- E. Legs
- F. None of the Above

73. _____ are similar in general appearance, but lack wings and may be as small as 1/8 inch.

- A. Instars
- B. Filiforms
- C. Immature stages
- D. Two longitudinal dark lines on their thorax (back)
- E. Nymph(s)
- F. None of the Above

74. The adult German cockroach is about 5/8 inch long, overall light brown in color with wings that cover the _____.

- A. Internode
- B. Dealates
- C. Proboscis
- D. Abdomen
- E. Furculum
- F. None of the Above

75. The _____ just behind the head (pronotum) is marked with two prominent black stripes.

- A. Osmeterium
- B. Thoracic shield
- C. Scutellum
- D. Wings
- E. Poikilotherm
- F. None of the Above

76. Immature stages (nymphs) are smaller, _____ and have a pale stripe (on at least the second and third thoracic segments in first stage nymphs) running lengthwise down the middle of the darker brown body.

- A. First stage nymphs
- B. Adult(s)
- C. Immature stages
- D. Wingless
- E. Nymph(s)
- F. None of the Above

77. The field cockroach, *Blattella vaga* Hebard, is similar to the _____ in appearance, but it occurs primarily outdoors where it feeds on decaying plant materials.

- A. German cockroach
- B. Field cockroach
- C. Banded
- D. Brownbanded cockroach
- E. Nymphs
- F. None of the Above

78. Compared to the _____, it is more active during daylight hours and will be found around lights. They also are known to fly when disturbed.

- A. German cockroach
- B. Field cockroach
- C. Banded
- D. Brownbanded cockroach
- E. Nymphs
- F. None of the Above

79. The _____, *Supella longipalpa* (Fabricius) is about the same size as the German cockroach, but appear "banded" because the wings are marked with a pale brown band at the base and another about a third of the distance from the base.

- A. German cockroach
- B. Field cockroach
- C. Banded
- D. Brownbanded cockroach
- E. Nymphs
- F. None of the Above

80. _____ produce an egg capsule that is attached to the end of the abdomen for up to a month before being dropped a day or so before eggs hatch.
- A. German cockroach D. Brownbanded cockroach
 B. Field cockroach E. Nymphs
 C. Banded F. None of the Above
81. Each 5/16 inch long, _____ contains 30 to 40 eggs (oothecae) which hatch in 2 to 4 days after being deposited.
- A. New infestations D. Dactyls
 B. Diapause E. Mesophyll
 C. Scutellum F. None of the Above
82. _____ from eggs are less than 1/8 inch long and wingless. They develop through 6 to 7 stages (instars) over 74 to 85 days (varying with temperature) before becoming adults. There may be four generations per year.
- A. New infestations D. Femora
 B. Dealates E. Nymphs hatching
 C. Parthenogenesis F. None of the Above
83. This is mainly an indoor species, although they will also _____ from structure to structure.
- A. Start infestations D. Have a life expectancy of six months
 B. Migrate outdoors E. Fly
 C. Be active at night F. None of the Above
84. Occasionally, new infestations begin by bringing in cartons and other materials from infested structures that _____.
- A. Start new infestations D. Harbor the roaches or their eggs
 B. Cause allergic reactions E. Start in and around the landscape
 C. Are mainly active at night F. None of the Above
85. Kitchens, bathrooms and other locations that provide food, moisture, warmth and shelter are _____.
- A. Great new infestations D. Wet
 B. Preferred habitats E. Dry
 C. Mainly active at night F. None of the Above
86. German cockroaches are mainly active at night, when they _____ for food and water.
- A. Search D. Mesophyll
 B. Frass E. Roset
 C. Detritivore F. None of the Above
87. During the day, they remain concealed in _____ unless they are over-crowded, with all developmental stages occurring together.
- A. Brush D. Groups
 B. Cracks and crevices E. Masses on interior walls
 C. Table tops F. None of the Above
88. They also can occur in attics, _____, crawl spaces, foundation cracks, garbage areas and around the landscape. May spread food contaminants.
- A. Microwave ovens D. Coffee machines
 B. Window sills E. Wall voids
 C. Muffler pipes F. None of the Above

89. Some people have allergic reactions to cockroaches or _____ (e.g., feces, body extracts).

- A. Infestations
- B. Allergic reactions
- C. Eggs
- D. Cockroach residues
- E. Droppings
- F. None of the Above

90. One of the most common household cockroach pests in the U.S.; presence in homes is a nuisance and they may spread food contaminants. Some people have _____ to cockroaches or cockroach residues (e.g., feces, body extracts).

- A. Infinity
- B. Attraction
- C. Allergic reactions
- D. Desire
- E. Move immediately from
- F. None of the Above

91. The German cockroach has approximately six generations per year and _____ is completed in 50 to 60 days.

- A. Crepuscular
- B. Will live
- C. Internode
- D. Dimorph
- E. Each generation
- F. None of the Above

92. The adult German cockroaches have a _____. This roach cannot fly but may glide very short distances if disturbed.

- A. Instar
- B. Internode
- C. Malformation
- D. Life expectancy of twelve months
- E. Life expectancy of six months
- F. None of the Above

93. German cockroaches can live in almost any room of a home or building. Because these roaches require water, they prefer a _____, such as around kitchen and bathroom sinks, appliances, furnaces, water heaters and furnace ducts.

- A. Warm dry area
- B. Dark cold area
- C. Home
- D. Warm moist environment
- E. Source of water
- F. None of the Above

94. A roach does not need head to breathe -- they _____ through their bodies and can survive for a month without food. A headless cockroach will live for about a week until it dies of thirst.

- A. Absorb oxygen
- B. Will live
- C. Estivate
- D. Metamorphose
- E. Overwinter
- F. None of the Above

Brownbanded Cockroach

95. Both nymphs and adults of this species are _____ and can be distinguished easily by the presence of two angled or transverse bands across the base of the wings and abdomen.

- A. Black
- B. Red
- C. Light brown
- D. Internode
- E. Detritivore
- F. None of the Above

96. Adult males are 1/2 to 5/8 inch long; the female is slightly shorter. Though both have wings, only the _____ can fly.

- A. Male
- B. Female
- C. TV roaches
- D. Nymphs and adults
- E. Instars
- F. None of the Above

97. The _____ carries each egg capsule for only a day or two before attaching it to a protected surface.
 A. Adult males D. Dealates
 B. Female E. Phytotoxemia
 C. Ovipositor F. None of the Above
98. The egg capsules are usually _____, and most of the eggs hatch within 50 days.
 A. Diapause D. Deposited in clusters or rows
 B. Cursorial E. Deposited in frass
 C. Scutellum F. None of the Above
99. Approximately 5 to 18 egg capsules are produced per female, each containing 19 eggs. About 3 to 9 months are required to complete the _____.
 A. Diapause D. Defoliate, defoliation
 B. Estivation E. Reproductive cycle
 C. Metamorphosis F. None of the Above
100. _____ prefer a dry, warm environment. They are generally found on ceilings, high on walls, and in light switches, closets and furniture. In some places they are known as "TV roaches" because of their frequent presence in living-room furniture and appliances.
 A. Adult males D. Nymphs and adults
 B. Female E. Reproductives
 C. TV roaches F. None of the Above
101. The wings of _____ cover their abdomens, while the females' wings are shorter. The yellow bands across the back are more pronounced on nymphs than on adults.
 A. Adult males D. Nymphs and adults
 B. Female E. Dealates
 C. Ovipositor F. None of the Above
102. These cockroaches are quite active, and the adults, especially the males, fly rapidly when disturbed. Both _____ may jump to escape danger.
 A. Adult males D. Adults and nymphs
 B. Female E. Reproductives
 C. Dealates F. None of the Above
103. The _____ carries her egg capsule for only a day or two before gluing it to a protected surface underneath or inside furniture, in a closet or on the ceiling in a darkened room. They can also be found in televisions and other appliances.
 A. Adult female D. Nymphs and adults
 B. Detritivores E. Dealates
 C. Pedipalps F. None of the Above
104. Brownbanded cockroaches are more apt to be found in homes, apartments, hotels, motels, nursing homes and hospitals than in restaurants, grocery stores and other commercial establishments. They prefer starchy foods and appear to have lower water requirements than _____.
 A. American Cockroaches D. Nymphs and adults
 B. German cockroaches E. Other cockroaches
 C. TV roaches F. None of the Above

105. They can occupy drier locations within a building. _____ frequently are found on ceilings in dark or dimly lit rooms, behind picture frames, in light switches, in upper walls of cabinets and closets, or on undersides of furniture and inside upholstered furniture. Because brownbanded cockroaches are found in so many locations they may be more difficult to control.
- A. American Cockroaches
 - B. German cockroaches
 - C. TV roaches
 - D. Nymphs and adults
 - E. Other cockroaches
 - F. None of the Above

American Cockroach (*Periplaneta americana*)

106. The American cockroach is the largest of the common species, growing to a length of 1 1/2 to 2 inches. It is reddish-brown with a light yellow band around the edge of the _____.

- A. Petiole
- B. Proboscis
- C. Head shield
- D. Exoskeleton
- E. Crepuscular
- F. None of the Above

107. Adults of both sexes have _____, but seldom fly. They are, however, capable of gliding flights.

- A. Pedipalps
- B. Forbs
- C. Imagoes
- D. Well-developed wings
- E. Pronotums
- F. None of the Above

108. _____ are smaller than adults, grayish-brown in color and less fully winged.

- A. Instars
- B. Female
- C. Imagoes
- D. Nymphs and adults
- E. Nymphal cockroaches
- F. None of the Above

109. The adult female usually drops her egg capsule within a day after it is formed. She often places the capsule near a food or water source or in a location where it can be covered with _____.

- A. Frass
- B. Endosperm
- C. Capsule
- D. Miscellaneous debris
- E. Poikilotherm
- F. None of the Above

110. Occasionally, she glues the capsule to some surface with secretions from her mouth. The capsule may be _____ in moist wood, in cracks in bark or in whorls of plants.

- A. Ovipositor
- B. Diapause
- C. Capsule
- D. Overwinter
- E. Deposited outdoors
- F. None of the Above

American Cockroach

111. _____ of this species are 1 1/2 to 2 inches long. They are the largest of all the cockroaches common in the World.

- A. Adult males
- B. Female
- C. Instars
- D. Adults
- E. Nymphal cockroaches
- F. None of the Above

112. Both _____ are shiny, reddish brown with a pale brown or yellow band around the edge of the head and back. The wings of both the male and female extend slightly beyond the body.

- A. Adult males
- B. Female
- C. Instars
- D. Nymphs and adults
- E. Male and female
- F. None of the Above

113. The female produces 15 to 90 egg capsules, each containing 14 to 16 eggs. Egg capsules are deposited near a _____ where the majority of eggs hatch within 60 days.

- A. Dactyl
- B. Internode
- C. Capsule
- D. Endosperm
- E. Scutellum
- F. None of the Above

114. The _____ is completed in 12 to 18 months.

- A. Overwinter
- B. Dealate
- C. Overwinter
- D. Defoliate, defoliation
- E. Reproductive cycle
- F. None of the Above

115. The _____ can survive 2 to 3 months without food and for a month without water.

- A. Adult
- B. Ovipositor
- C. Malformation
- D. Internode
- E. Nymphal cockroaches
- F. None of the Above

116. _____ are not typically found in homes; however, in commercial and industrial establishments they can be found in damp, warm basements, in furnace or boiler rooms, and storage rooms.

- A. Adult males
- B. Females
- C. Ovipositors
- D. Nymphs and adults
- E. American cockroaches
- F. None of the Above

117. Because of their preference for _____, they are notable as a problem in urban commercial districts.

- A. Finances
- B. Dry areas
- C. Food
- D. Heat
- E. Sewers and heat tunnels
- F. None of the Above

Oriental Cockroach

118. This dark reddish brown to black roach is commonly referred to as the "_____." It is considered the most repulsive of all of the roaches and has a strong odor.

- A. Roach
- B. Sewer bug
- C. Water bug
- D. Chinese roach
- E. Blackie
- F. None of the Above

119. The adult females are 1 1/4 inches long and _____.

- A. Carries an egg capsule
- B. Lives in sewer drains
- C. Has 8 legs
- D. Is a reproductive
- E. Almost wingless
- F. None of the Above

120. The _____ are 1 inch long and have wings that are about half as long as their body. Neither males nor females can fly or glide.

- A. Dealates
- B. Instars
- C. Nymphs
- D. Adult females
- E. Adult males
- F. None of the Above

121. The _____ carries an egg capsule for about 30 hours and then drops or attaches it to a protected surface near food. On average, a female produces eight egg capsules, each containing 16 eggs which hatch within 60 days.

- A. Dealates
- B. Nymphs
- C. Roach
- D. Reproductives
- E. Female
- F. None of the Above

122. The _____ of this roach is completed in 6 to 9 months.

- A. Egg capsule
- B. Mating
- C. Completion
- D. Reproductive cycle
- E. Life cycle
- F. None of the Above

123. _____ prefer damp, cool, dark areas. They are generally found in sewer drains, crawl space areas, basements, cellars, or on the first floor of buildings.

- A. Nymphs
- B. Roaches
- C. Water bugs
- D. Dealates
- E. Adult males
- F. None of the Above

124. Infestations by this roach are most frequently found during spring (_____) and fall (October). They may spend considerable time outdoors during warm weather.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

Wood Cockroach

125. This group of roaches causes occasional problems in homes and public places. They are seen in late _____, especially after rains.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

126. This roach is often confused with both adult American and _____. However, the wood roach is chestnut brown and has a dull white band around the edges of the head and back.

- A. Females
- B. Roaches
- C. Adults
- D. Oriental roaches
- E. One generation per year
- F. None of the Above

127. Adults are 1 to 1 1/4 inches long. _____ have wings covering only about half the body and do not fly. Males have wings longer than the body and are excellent fliers.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Instars
- F. None of the Above

128. Females produce about 30 egg capsules, each containing about 32 to 36 eggs. This roach completes _____.

- A. Her work
- B. Nymph stage
- C. Egg laying
- D. The life cycle
- E. One generation per year
- F. None of the Above

129. Wood cockroaches are usually found in wood piles, hollow trees or under loose bark.

Buildings in wooded areas are prone to have problems with wood roaches during rainy periods. Although this roach prefers to live outside, _____ are attracted to light and may enter buildings. They are sometimes brought in along with firewood, but do not usually survive or multiply inside buildings.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Dealates
- F. None of the Above

130. The _____ is slightly more than 1 inch long and is a uniform, very dark brown to black. The head shield is a solid dark color.

- A. Females
- B. Roaches
- C. Adult
- D. Adult males
- E. Nymphs
- F. None of the Above

131. Both _____ have wings longer than their bodies and are capable of flying or gliding.

- A. Dealates and Instars
- B. Roaches
- C. Adults and Instars
- D. Nymphs and Adults
- E. Males and females
- F. None of the Above

132. Nymphs are smaller than adults and have only partially developed wings. _____ usually carry their egg capsules for a day or two before attaching them to the outside surfaces of buildings and other protected sites near the ground.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Adult females
- F. None of the Above

133. These _____ live primarily outdoors and prefer wood, leaf litter, trash piles and other humid sites with abundant organic matter. They also hide under rocks, ground cover and building materials. They may enter homes with infested firewood during seasonal migrations.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Cockroaches
- F. None of the Above

Habitat

134. The Smokybrown cockroach has a great tendency to lose moisture through the cuticle and thus requires water every two to three days. These requirements are important to remember when implementing your _____.

- A. Treatment
- B. Monitoring
- C. Penetration
- D. Control program
- E. Roach extermination program
- F. None of the Above

135. This pest is most likely found in areas which are protected, moist, dark, relatively warm and free from the _____. In nature, tree holes and the canopies of palm trees offer the ideal environment in which this bug can thrive.

- A. Pesticide
- B. Dry habitat
- C. Deep penetration
- D. Desiccating effects of air flow
- E. Treatment
- F. None of the Above

Control Smokybrown Cockroaches

136. Eliminate or alter any conditions which encourage the _____ of the roaches. These pests thrive in dark, humid areas which have little or no air flow.

- A. Life cycle
- B. Moist habitat
- C. Deeper penetration
- D. Presence and/or reproduction
- E. Removal and destroying hiding areas
- F. None of the Above

137. Spray exterior of structure with Suspend SC, Demon WP or Cynoff WP. These odorless insecticides will give a quick knockdown of bugs while lasting for several weeks, usually yielding about a _____.

- A. 90 day residual
- B. 10 day residual
- C. 1 inch penetration
- D. 30 day residual
- E. 50 day residual
- F. None of the Above

138. Spray any crack, crevice or entry point on the outside of the structure. This includes treating around all windows, doors, vents and in _____ of brick veneer. Also spray tree trunks, from ground to crotch of tree, but no higher than six feet.

- A. Areas
- B. Weep holes
- C. Deep penetration
- D. Areas roaches like to hide
- E. And outside
- F. None of the Above

139. All _____ should be sprayed with insecticide. These exterior surfaces should be treated 3 to 4 times each year.

- A. Interiors
- B. Moist habitats
- C. Mulched areas
- D. Grass and bushes
- E. Roaches
- F. None of the Above

140. If necessary, _____ in the following areas: basements, garages, carports, attics, closets, laundry rooms.

- A. Trap
- B. B and G
- C. C/C
- D. Dust
- E. Spray indoors
- F. None of the Above

141. Also treat beneath and behind large appliances (refrigerators, stoves, etc.) or other areas where these _____. (Spraying all of your baseboards with any bug spray is not necessary!)

- A. Thrive in the dark
- B. Have a moist habitat
- C. Penetrate
- D. Pests live
- E. Roaches prefer to hide
- F. None of the Above

142. Indoor areas should be treated _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. 2 to 3 times per year
- E. 1 to 2 times per year
- F. None of the Above

143. Hollow blocks or other areas such as behind brick walls and along plumbing lines should be treated with _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

144. Although many dusts will kill roaches, _____ is water-proof and will not be destroyed by the moist habitat of the Smokybrown as would other dusts.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

145. For deeper penetration and better distribution of insecticide dust, use a _____. Delta Dust should be used once each year or as needed.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

Asian Cockroach *Blattella asahinai*

146. The Asian cockroach was identified as a _____ to the United States in 1986 when a professional pest control operator collected these insects in Lakeland, Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. Newly introduced species
- F. None of the Above

147. He referred to them as German cockroaches, *Blattella germanica* (L.), but noted that their behavior was unlike any other _____ that he had previously encountered. Upon further investigation the cockroaches were found to be *B. asahinai*, Asian cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

Distribution and Habits

148. The Asian cockroach was first described in 1981 from insects collected on Okinawa Island, Japan. It is most likely that _____ was introduced into the United States through imports from Japan.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. *B. asahinai*
- E. Wood cockroach(es)
- F. None of the Above

149. Since the first identification of _____ in Lakeland (Polk County), it has been reported from Marion County in central Florida to Broward County in southwest Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. *B. asahinai*
- F. None of the Above

150. The primary habitat of the _____ is outdoors in shaded mulched or composted areas, such as landscaping and gardens, where fresh plant litter accumulates.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Water bug
- E. Wood cockroach(es)
- F. None of the Above

151. Populations of 30,000 to 250,000 insects per acre have been reported. Members of this species are strong fliers, unlike their close relative, the _____.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Polish cockroach
- E. Wood cockroach(es)
- F. None of the Above

152. They may invade structures but indoor infestations are rare occurrences. They become _____ and are attracted to light-colored surfaces and brightly lit areas.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Male tergal glands
- E. Indoor infestations
- F. None of the Above

153. _____ will take flight during the day if disturbed. The presence of this pest is obvious since their peak activity period coincides with our leisure time.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Males
- E. Indoor infestations
- F. None of the Above

Description

154. _____ are almost identical to German cockroaches. Chemical analysis by gas chromatography will confirm the species.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Wood cockroach(es)
- E. Indoor infestations
- F. None of the Above

155. However, there are also slight morphological differences between *B. asahinai* and *B. germanica*. _____ adults have longer and narrower wings than those of German cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Black
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

156. There are also differences between _____ in the shape of the male tergal glands.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Female tergal glands
- E. The species
- F. None of the Above

157. Asian cockroach females produce _____ and nymphs are smaller than that of German cockroaches.

- A. Females
- B. Roaches
- C. Adults
- D. Smaller egg capsules
- E. Wings
- F. None of the Above

158. Asian cockroach first instars have 23 antennal segments while German cockroach first instars have 24 to 25. Finally, margins of the abdomen and spots along the abdominal midsection of *B. asahinai* late instars _____, whereas those areas are lightly pigmented in *B. germanica*.

- A. Appear red
- B. Appear white
- C. Appear black
- D. Are small
- E. Are large
- F. None of the Above

Life Cycle

159. Female Asian cockroaches have a lifetime reproductive potential for producing approximately four egg capsules, each averaging _____.

- A. 137 nymphs
- B. 100 nymphs
- C. 37 nymphs
- D. 3700 nymphs
- E. 370 nymphs
- F. None of the Above

160. Immatures take approximately 67 days to reach adulthood. Females can then live for 104 days and males can live for _____.

- A. 49 days
- B. 49 weeks
- C. 49 years
- D. 149 days
- E. 490 days
- F. None of the Above

161. Females can produce their first egg capsule _____ after adult eclosion, and can drop another 20 days later.

- A. 23 days
- B. 33 days
- C. 3 days
- D. 10 days
- E. 13 days
- F. None of the Above

162. Adults are abundant _____ and again August through September. Nymphs predominate May through August.

- A. March to June
- B. June and July
- C. February through May
- D. April and May
- E. May or June
- F. None of the Above

Management

163. _____ of Asian cockroaches is difficult due to their mobility and abundance of population sites.

- A. Typically treatment
- B. Control
- C. Tracking
- D. Management
- E. Numerous infestations
- F. None of the Above

164. Traditional treatments using _____ inside and around the perimeter of a structure are ineffective due to numerous infestations in mulched and wooded areas.

- A. Traps
- B. Control
- C. Dusts
- D. B and G
- E. Residual sprays
- F. None of the Above

165. Plus, adults enter homes through windows and doorways, avoiding areas typically treated for _____ of German cockroaches.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Numerous infestations
- F. None of the Above

166. Sodium vapor lamps for security lighting and yellow incandescent bulbs for porch lighting are both less attractive to adults and would thereby _____ of adult insects to lighting near buildings.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Reduce attraction
- F. None of the Above

167. Although Asian cockroaches are susceptible to all pesticides, toxic pelletized baits scattered outdoors have _____.

- A. Typically been treated
- B. Been controlled
- C. Been susceptible
- D. Are less attracted
- E. Provided the most reliable control
- F. None of the Above

168. The _____ for a pesticide or herbicide to enter the body are: inhalation, skin and eye contact, ingestion, and injection.

- A. Prevention techniques
- B. Basic cycle
- C. Basic routes
- D. Direction
- E. Methods
- F. None of the Above

169. The prevention of entry by one of these routes can be accomplished by control mechanisms such as engineering controls, personal protective equipment, and _____.

- A. Prevention
- B. Basic routes
- C. Safety
- D. Can be minimized
- E. Administrative controls
- F. None of the Above

170. Each route can be minimized by a variety of _____ depending on the hazard and operation.

- A. Prevention methods
- B. Basic routes
- C. Control measures
- D. Techniques
- E. Administrative controls
- F. None of the Above

Madagascar Giant Hissing Roaches

171. The cockroach family, to which Madagascar roaches belong, is among the most primitive of the winged insects. The nearest relatives to _____ include mantids, grass-hoppers, stick insects, and termites.

- A. Bees
- B. Cockroaches
- C. Winged insects
- D. Beetles
- E. Bed bugs
- F. None of the Above

172. There are at least 3,500 known species living today, in _____, most of which originate in the tropics.

- A. 500 genera
- B. 450 genera
- C. 400 genera
- D. On this planet
- E. USA
- F. None of the Above

173. As a group, cockroaches exhibit a _____ of sizes, colors, and habits.

- A. Diurnal
- B. Small diversity
- C. Commensally
- D. Wide diversity
- E. Cornucopia
- F. None of the Above

174. Although they have an infamous reputation as household pests, in reality only about half a dozen species (less than one percent of all known forms) have _____ with humans.

- A. Diurnal skills
- B. Exhibited hostility
- C. Made friends
- D. Negative associations
- E. Toxic relationships
- F. None of the Above

175. Many species are diurnal, some are _____, and others live in the ground or are wood-boring. Some, such as the Madagascar roach, do not have wings.

- A. Intellectual
- B. Semiaquatic
- C. Hostile
- D. Scavengers
- E. Toxic
- F. None of the Above

176. About a dozen or so species live _____ in the nests of ants, wasps, or termites.

- A. Diurnal
- B. Near and
- C. Commensally
- D. As scavengers outdoors near
- E. As friends
- F. None of the Above

177. There are also roach species that inhabit caves with bats or live in the desert. The majority of cockroaches in tropical countries exist as scavengers outdoors, feeding on vegetation and organic matter in _____.

- A. Their nests
- B. The tropics
- C. Dry areas
- D. Outdoors
- E. An apparently harmless fashion
- F. None of the Above

178. The toxicity of the Thailand and Middle-Asian cobra venoms as well as of their isolated components (_____ and some others) for cockroach *Gromphadorhina portentosa* was studied.

- A. Poisons
- B. Sugars
- C. Vapors
- D. Neurotoxins, cytotoxins, phospholipases
- E. Toxic
- F. None of the Above

179. It was found that, as compared to mammals, cockroaches are _____ to cobra venoms and their components.
- A. Diurnal
 - B. More resistant
 - C. Related
 - D. Scavengers
 - E. Toxic
 - F. None of the Above

Cockroach Management Strategies

Prevention

180. _____ of roach colonies can be prevented by close inspection of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.

- A. Entry and establishment
- B. Elimination
- C. Should not be left
- D. Avoid unnecessary control
- E. Developed resistance
- F. None of the Above

181. Caulking or puttying areas such as cracks and crevices around kitchen cabinets, bathtubs, water and plumbing pipes, cracks on floors and walls, and exterior windows and doors can eliminate most hiding places and _____.

- A. Cannot elevate growth
- B. Can eliminate
- C. Should not be left
- D. Help reduce the cockroach population
- E. Helps develop resistance
- F. None of the Above

182. Other structural modifications, such as weather stripping and pipe collars, also help to _____.

- A. Increase protection
- B. Can eliminate
- C. Kill the pests
- D. Avoid unnecessary growth
- E. Reduce cockroach entry and establishment
- F. None of the Above

Sanitation

183. Good housekeeping is the most important factor in preventing and _____.

- A. Cannot forgotten
- B. Elimination
- C. Should not be left
- D. Controlling cockroach populations
- E. Reducing resistance
- F. None of the Above

184. Cockroaches _____, water and shelter. Do not allow food particles to remain on shelves or floors.

- A. Cannot live without food
- B. Can eliminate
- C. Storage areas should not be left
- D. Avoid unnecessary food stuffs
- E. Have developed resistance
- F. None of the Above

185. Dishes should not be left unwashed after a meal, particularly overnight. Clean areas under refrigerators, stoves, sinks and furniture regularly to remove bits of food that have accumulated. If pets are fed indoors, _____, especially overnight. Store pet food in tight containers, and clean litter boxes frequently.

- A. Use baits
- B. Use dusts
- C. Should not be left
- D. Avoid unnecessary food
- E. Teach pets to deal with the cockroaches
- F. None of the Above

186. Keep all food items covered or in a refrigerator at all times between uses. Empty garbage and _____ and keep refuse in a covered container away from the residence.

- A. Burn it
- B. Eliminate extra humans
- C. Should not be left
- D. Avoid unnecessary
- E. Develop control methods
- F. None of the Above

187. If possible, _____. Common sources include leaking faucets and pipes, drains, toilet tanks, wash basins and sink traps, aquaria and water-filled tubs. Pets' water dishes, beverage bottles or cartons, and pipe condensation can provide an adequate water supply for roaches. Roach breeding is encouraged by clutter.

- A. Move
- B. Use dusts
- C. Call pest control
- D. Avoid unnecessary outdoor activities
- E. Use DDT
- F. None of the Above

188. Avoid unnecessary storage of corrugated paper boxes, piles of paper bags, newspaper, magazines, and _____.

- A. Concrete
- B. Beer
- C. Boric acid
- D. Metal
- E. Motor oil
- F. None of the Above

Chemical Control

189. Cockroaches have been the target of many insecticides over the years but they have _____ to several of them.

- A. Cannot escape
- B. Eliminated
- C. Evolved
- D. Learned to avoid eating
- E. Developed resistance
- F. None of the Above

190. Attempts to use pheromones as sex lures or to sterilize male cockroaches have thus far not _____ on a large scale.

- A. Proved practical
- B. Worked
- C. Impressed
- D. Proved cost effective
- E. Developed resistance
- F. None of the Above

191. _____ such as diatomaceous earth to penetrate their protective cuticles may work in individual households as a nonpoisonous alternative.

- A. Dusts
- B. Salts
- C. Sprinkling abrasives
- D. Avoid unnecessary dusting
- E. Spraying pesticides
- F. None of the Above

192. Once the cuticle is abraded, the roaches die of dehydration. Also effective is _____, which is both abrasive and poisonous to cockroaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Boric acid powder
- F. None of the Above

193. _____ cockroaches from multiplying is to keep a clean house and block their access to water, which they need to survive.

- A. Crack and crevice or C/C
- B. Drione Dust will control
- C. Application of pesticide to
- D. The best way to prevent
- E. Crusader Hand Dust will kill
- F. None of the Above

194. American cockroaches are very easy to keep and rear in the laboratory and make excellent subjects for experimentation because of their large size and _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Treatment Methods

195. The disadvantage is that the treatments need to be where the roaches are hiding. Cockroaches have been seen thriving less than a foot away from _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. A treated surface
- F. None of the Above

196. Their path of feeding and moving to and from shelter never crossed the _____. This enabled them to live virtually on top of treated areas and yet still survive.

- A. Crack and crevice or C/C
- B. Treated surfaces
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Cracks and Crevice

197. When roaches began to build resistance to chemicals and manufacturers designed their products with less volatility, new packaging and treatment techniques became necessary. These new trends became known as "_____".

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

198. Basically, _____ means applying the chemical into the cracks and crevices suspected of harboring roaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

199. There are two types of products commonly used for this purpose: _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

200. In fact, a good pest control technician should be able to get roach control with nothing more than _____ if he or she knows where to do the application.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust
- E. Crusader Hand Duster
- F. None of the Above

You are finished with your assignment, please fax or e-mail a copy of your driver's license and the Answer Key and Registration form. Always call us the next day to ensure we received all your information.

Cockroach Control Assignment #5 For Students Names T-Z

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 70 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 272-0747. This assignment is available to you in a Word Format on TLC's Website. You can find online assistance for this course on the in the Search function on Adobe Acrobat PDF to help find the answers. Once you have paid the course fee, you will be provided complete course support from Student Services (928) 468-0665.

Write your answers on the Answer Key found in the front of this assignment.

1. We will require all students to fax or e-mail a copy of their driver's license with the registration form.
2. You will need to pick one of the following five assignments to complete. This selection process is based upon your last name. If your last name begins with an A to E, you will pick assignment number 1, if your last name begins with the letter F to L, you are to complete assignment number 2 and if your last name begins with the letter M-P, you will pick assignment number 3 and if your last name begins with the letter Q-S, you will pick assignment number 4, and if your last name begins with the letter T-Z, you will pick assignment number 5.

Multiple Choice, Please select one answer and mark it on the answer key. The answer must come from the course text. (s) Means answer can be plural or singular.

Label Requirements

1. When these requirements appear on pesticide labels, all end-users must meet them unless exempt. Exempt end-users should voluntarily obey the requirements because of the dangers of

- _____.
- | | |
|---------------------------|----------------------|
| A. Pesticide exposure | D. Pesticide |
| B. Pesticide residues | E. Exempt end-users |
| C. Display of information | F. None of the Above |

2. _____ are intended to eliminate exposure to pesticides and to inform employees about the occupational hazards of pesticides. These require employers to make sure that employees are provided with:

- | | |
|---------------------------|-------------------------|
| A. Handler employer | D. Pesticide |
| B. Pesticide residues | E. Generic requirements |
| C. Display of information | F. None of the Above |

3. _____ at a central location (WPS safety poster, the location of emergency medical facilities, and a list of recent pesticide applications).

- | | |
|-------------------------|---------------------------|
| A. Instruction | D. Special application |
| B. Notice | E. Display of information |
| C. Generic requirements | F. None of the Above |

4. _____ exchanges between employers of agricultural workers and employers of commercial (for-hire) pesticide applicators.

- | | |
|---------------------------|---------------------------|
| A. Instruction | D. Special application |
| B. Details of information | E. Monitoring of handlers |
| C. Generic requirements | F. None of the Above |

5. _____ about pesticide applications and information about pesticides used.

- | | |
|-------------------------|---------------------------|
| A. Instruction | D. Special application |
| B. Notice | E. Monitoring of handlers |
| C. Generic requirements | F. None of the Above |

15. If you are a _____, you are responsible for providing your agricultural worker employees with the protections that the WPS requires for workers. (In the WPS itself, "worker employers" are called "agricultural employers.")

- A. Handler employer
- B. Crop Adviser
- C. Pesticide applicator
- D. Worker employer
- E. Exempt end-users
- F. None of the Above

Handler Employers:

Handler employers are people who:

16. Employ _____ (including members of their family), for any type of compensation, or

- A. Handler employer
- B. Pesticide handlers
- C. Crop Advisers
- D. Workers
- E. Exempt end-users
- F. None of the Above

17. If you are a handler employer, you are responsible for providing the _____ you employ with the protections that the WPS requires for handlers.

- A. Handler employer
- B. Pesticide workers
- C. Crop Advisers
- D. Pesticide handlers
- E. Exempt end-users
- F. None of the Above

If You Employ Supervisors

You must:

18. Require them to make sure the _____ they supervise comply with the WPS and receive its protections.

- A. Handler employees
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

19. Give them enough information and directions about the WPS requirements to make sure that the _____ they supervise receive the protections required by the WPS.

- A. Handler employees
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

20. Tell them who is responsible for all actions necessary for compliance with the WPS. Even if you assign _____ to carry out the duties required by the WPS, you are responsible for making sure that all those duties are performed.

- A. An employee
- B. Pesticide employees
- C. Pesticide handlers
- D. Workers and handlers
- E. Exempt end-users
- F. None of the Above

General Duties of WPS

The general duties of the WPS require an agricultural employer or a pesticide handler-employer to:

21. Assure that each _____ subject to the standard receives the required protections.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

22. Assure that _____ subject to the standard is used in a manner consistent with the labeling of the pesticide, including the requirements in the standard.

- A. Agricultural employer
- B. Person
- C. Any pesticide
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

23. Provide sufficient information and directions to _____ or handler to assure that each worker or handler receives the required protection. The information and directions must specify which persons are responsible for actions required to comply with the standard.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Each person who supervises any worker
- F. None of the Above

24. Require each person who supervises any worker or handler to assure compliance by the worker or handler with the provisions of this standard and to assure that the _____ receives the required protection (40 CFR).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

25. The general duties also prohibit _____ from taking any retaliatory actions against workers attempting to comply with this standard, or from taking any action that prevents or discourages any worker or handler from complying or attempting to comply with the WPS.

- A. Agricultural employer
- B. Person
- C. Agricultural and handler employers
- D. Worker and/or handler
- E. Pesticide handler-employer
- F. None of the Above

Labeling

26. Requires everyone applying pesticides to _____ on the pesticide container's label.

- A. Obey instructions printed
- B. Decontaminate supplies
- C. Find emergency assistance
- D. Safely apply pesticides
- E. Wear personal protective equipment as noted
- F. None of the Above

Summary of WPS Requirements

27. _____ -- Applicators are prohibited from applying a pesticide in a way that will expose workers or other persons. Workers are excluded from areas while pesticides are being applied.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Protection during applications
- E. Personal protective equipment
- F. None of the Above

28. _____ must be specified on all agricultural plant pesticide product labels. Workers are excluded from entering a pesticide-treated area during the restricted-entry interval, with only narrow exceptions.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

29. _____ must be provided and maintained for handlers and early-entry workers.

- A. Restricted-entry intervals
- B. Decontamination supplies
- C. Emergency assistance
- D. Applying pesticides
- E. Personal protective equipment
- F. None of the Above

30. _____ -- Workers must be notified about treated areas so they may avoid inadvertent exposures.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Notification to workers
 C. Emergency assistance F. None of the Above
31. _____ -- Handlers and workers must have an ample supply of water, soap, and towels for routine washing and emergency decontamination.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
32. _____ -- Transportation must be made available to a medical care facility if a worker or handler may have been poisoned or injured. Information must be provided about the pesticide to which the person may have been exposed.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
33. _____ Training is required for all workers and handlers, and a pesticide safety poster must be displayed.
- A. Restricted-entry intervals D. Applying pesticides
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above
34. Access to labeling and site-specific information -- Handlers and workers must be informed of _____. Central posting of recent pesticide applications is required.
- A. Restricted-entry intervals D. Pesticide label requirements
 B. Decontamination supplies E. Personal protective equipment
 C. Emergency assistance F. None of the Above

WHO DOES THE WPS PROTECT?

35. The WPS requires employers to take steps to protect two types of agricultural employees: _____.
- A. Worker and Agricultural employer D. Worker and/or handler
 B. Worker and Person E. Worker and Pesticide handler-employer
 C. Workers and Supervisors F. None of the Above
36. The terms “worker” and “pesticide handler” are defined very specifically in the WPS, and _____ who meet these definitions must comply with the WPS.
- A. Agricultural employer D. Worker and/or handler
 B. Employers of persons E. Pesticide handler-employer
 C. Workers F. None of the Above
37. Depending on the tasks being performed, you may need to provide the same _____ with worker protections on some occasions and pesticide handler protections on other occasions.
- A. Agricultural employer D. Worker and/or handler
 B. Person E. Pesticide handler-employer
 C. Employee F. None of the Above
38. _____ of agricultural establishments and members of their immediate family are exempt from many WPS requirements.
- A. Agricultural employer D. Worker and/or handler
 B. Person E. Pesticide handler-employer
 C. Workers F. None of the Above

WORKERS

39. A worker is anyone who: (1) is _____ for any type of compensation and (2) is doing tasks, such as harvesting, weeding, or watering, relating to the production of agricultural plants on a farm, forest, nursery, or greenhouse.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Employed (including self-employed)
- E. Pesticide handler-employer
- F. None of the Above

40. This term does not include persons who are employed by a commercial establishment to perform tasks as _____.

- A. Agricultural employer
- B. Crop advisors
- C. Workers
- D. Worker and/or handler
- E. Crop advisors
- F. None of the Above

PESTICIDE HANDLERS

41. A pesticide handler is anyone who: is employed (including self-employed) for any type of compensation by _____ or a commercial pesticide handling establishment that uses pesticides in the production of agricultural plants on a farm, forest, nursery, or greenhouse.

- A. Product labeling
- B. Use of soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

And is doing any of the following tasks:

42. Assisting with the _____, including incorporating the pesticide into the soil after the application has occurred.

- A. Product labeling
- B. Soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

43. Entering a greenhouse or other enclosed area after application and before the inhalation exposure level listed on the product labeling has been reached or one of the WPS ventilation criteria have been met to: – operate ventilation equipment, – _____, such as tarps, used in fumigation, or – check air concentration levels.

- A. Product labeling
- B. Adjust or remove coverings
- C. Restricted-entry interval
- D. Entering an agricultural establishment
- E. Application of pesticides
- F. None of the Above

44. Entering a treated area outdoors after _____ to adjust or remove soil coverings, such as tarpaulins.

- A. Product labeling
- B. Application of any soil fumigant
- C. Restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

45. Performing tasks as a crop advisor: – during any pesticide application, – before any inhalation exposure level or ventilation criteria listed in the labeling has been reached or one of the WPS ventilation criteria has been met, – _____.

- A. Product labeling
- B. Soil fumigant
- C. During any restricted-entry interval
- D. An agricultural establishment
- E. Application of pesticides
- F. None of the Above

NOT A HANDLER

46. A person is not a _____ if he or she only handles pesticide containers that have been emptied or cleaned according to instructions on pesticide product labeling or, if the labeling has no such instructions, have been triple-rinsed or cleaned by an equivalent method, such as pressure rinsing.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

47. A person is not a _____ if he or she (1) is only handling pesticide containers that are unopened and (2) is not, at the same time, also doing any handling task (such as mixing or loading).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

48. You are not a _____ if you: purchase pesticides and transport them unopened to an establishment. Carry unopened containers into a pesticide storage facility. Transport unopened containers to the site where they are to be mixed, loaded, or applied.

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

49. You are a _____ if you are loading unopened water-soluble packets into a mixing tank (because you are mixing and loading the pesticide).

- A. Agricultural employer
- B. Person
- C. Workers
- D. Handler
- E. Pesticide handler-employer
- F. None of the Above

Four Basic Requirements of WPS

These regulations contain four basic requirements:

50. Workers are _____.
- A. Not allowed to drink pesticide(s)
 - B. To wear PPE
 - C. Allowed to preform handling activities
 - D. Not allowed in the restricted entry intervals (REI)
 - E. Not to be sprayed with pesticides
 - F. None of the Above

Brownbanded Cockroach

51. Both nymphs and adults of this species are _____ and can be distinguished easily by the presence of two angled or transverse bands across the base of the wings and abdomen.

- A. Black
- B. Red
- C. Light brown
- D. Internode
- E. Detritivore
- F. None of the Above

52. Adult males are 1/2 to 5/8 inch long; the female is slightly shorter. Though both have wings, only the _____ can fly.

- A. Male
- B. Female
- C. TV roaches
- D. Nymphs and adults
- E. Instars
- F. None of the Above

53. The _____ carries each egg capsule for only a day or two before attaching it to a protected surface.

- A. Adult males
- B. Female
- C. Ovipositor
- D. Dealates
- E. Phytotoxemia
- F. None of the Above

54. The egg capsules are usually _____, and most of the eggs hatch within 50 days.

- A. Diapause
- B. Cursorial
- C. Scutellum
- D. Deposited in clusters or rows
- E. Deposited in frass
- F. None of the Above

55. Approximately 5 to 18 egg capsules are produced per female, each containing 19 eggs. About 3 to 9 months are required to complete the _____.

- A. Diapause
- B. Estivation
- C. Metamorphosis
- D. Defoliate, defoliation
- E. Reproductive cycle
- F. None of the Above

56. _____ prefer a dry, warm environment. They are generally found on ceilings, high on walls, and in light switches, closets and furniture. In some places they are known as "TV roaches" because of their frequent presence in living-room furniture and appliances.

- A. Adult males
- B. Female
- C. TV roaches
- D. Nymphs and adults
- E. Reproductives
- F. None of the Above

57. The wings of _____ cover their abdomens, while the females' wings are shorter. The yellow bands across the back are more pronounced on nymphs than on adults.

- A. Adult males
- B. Female
- C. Ovipositor
- D. Nymphs and adults
- E. Dealates
- F. None of the Above

58. These cockroaches are quite active, and the adults, especially the males, fly rapidly when disturbed. Both _____ may jump to escape danger.

- A. Adult males
- B. Female
- C. Dealates
- D. Adults and nymphs
- E. Reproductives
- F. None of the Above

59. The _____ carries her egg capsule for only a day or two before gluing it to a protected surface underneath or inside furniture, in a closet or on the ceiling in a darkened room. They can also be found in televisions and other appliances.

- A. Adult female
- B. Detritivores
- C. Pedipalps
- D. Nymphs and adults
- E. Dealates
- F. None of the Above

60. Brownbanded cockroaches are more apt to be found in homes, apartments, hotels, motels, nursing homes and hospitals than in restaurants, grocery stores and other commercial establishments. They prefer starchy foods and appear to have lower water requirements than _____.

- A. American Cockroaches
- B. German cockroaches
- C. TV roaches
- D. Nymphs and adults
- E. Other cockroaches
- F. None of the Above

61. They can occupy drier locations within a building. _____ frequently are found on ceilings in dark or dimly lit rooms, behind picture frames, in light switches, in upper walls of cabinets and closets, or on undersides of furniture and inside upholstered furniture. Because brownbanded cockroaches are found in so many locations they may be more difficult to control.

- A. American Cockroaches
- B. German cockroaches
- C. TV roaches
- D. Nymphs and adults
- E. Other cockroaches
- F. None of the Above

American Cockroach (*Periplaneta americana*)

62. The American cockroach is the largest of the common species, growing to a length of 1 1/2 to 2 inches. It is reddish-brown with a light yellow band around the edge of the _____.

- A. Petiole D. Exoskeleton
- B. Proboscis E. Crepuscular
- C. Head shield F. None of the Above

63. Adults of both sexes have _____, but seldom fly. They are, however, capable of gliding flights.

- A. Pedipalps D. Well-developed wings
- B. Forbs E. Pronotums
- C. Imagoes F. None of the Above

64. _____ are smaller than adults, grayish-brown in color and less fully winged.

- A. Instars D. Nymphs and adults
- B. Female E. Nymphal cockroaches
- C. Imagoes F. None of the Above

65. The adult female usually drops her egg capsule within a day after it is formed. She often places the capsule near a food or water source or in a location where it can be covered with _____.

- A. Frass D. Miscellaneous debris
- B. Endosperm E. Poikilotherm
- C. Capsule F. None of the Above

66. Occasionally, she glues the capsule to some surface with secretions from her mouth. The capsule may be _____ in moist wood, in cracks in bark or in whorls of plants.

- A. Ovipositor D. Overwinter
- B. Diapause E. Deposited outdoors
- C. Capsule F. None of the Above

American Cockroach

67. _____ of this species are 1 1/2 to 2 inches long. They are the largest of all the cockroaches common in the World.

- A. Adult males D. Adults
- B. Female E. Nymphal cockroaches
- C. Instars F. None of the Above

68. Both _____ are shiny, reddish brown with a pale brown or yellow band around the edge of the head and back. The wings of both the male and female extend slightly beyond the body.

- A. Adult males D. Nymphs and adults
- B. Female E. Male and female
- C. Instars F. None of the Above

69. The female produces 15 to 90 egg capsules, each containing 14 to 16 eggs. Egg capsules are deposited near a _____ where the majority of eggs hatch within 60 days.

- A. Dactyl D. Endosperm
- B. Internode E. Scutellum
- C. Capsule F. None of the Above

70. The _____ is completed in 12 to 18 months.

- A. Overwinter D. Defoliate, defoliation
- B. Dealate E. Reproductive cycle
- C. Overwinter F. None of the Above

Oriental Cockroach

71. The _____ carries an egg capsule for about 30 hours and then drops or attaches it to a protected surface near food. On average, a female produces eight egg capsules, each containing 16 eggs which hatch within 60 days.

- A. Dealates
- B. Nymphs
- C. Roach
- D. Reproductives
- E. Female
- F. None of the Above

72. The _____ of this roach is completed in 6 to 9 months.

- A. Egg capsule
- B. Mating
- C. Completion
- D. Reproductive cycle
- E. Life cycle
- F. None of the Above

73. _____ prefer damp, cool, dark areas. They are generally found in sewer drains, crawl space areas, basements, cellars, or on the first floor of buildings.

- A. Nymphs
- B. Roaches
- C. Water bugs
- D. Dealates
- E. Adult males
- F. None of the Above

74. Infestations by this roach are most frequently found during spring (_____) and fall (October). They may spend considerable time outdoors during warm weather.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

Wood Cockroach

75. This group of roaches causes occasional problems in homes and public places. They are seen in late _____, especially after rains.

- A. March to June
- B. June and July
- C. August
- D. April and May
- E. May or June
- F. None of the Above

76. This roach is often confused with both adult American and _____. However, the wood roach is chestnut brown and has a dull white band around the edges of the head and back.

- A. Females
- B. Roaches
- C. Adults
- D. Oriental roaches
- E. One generation per year
- F. None of the Above

77. Adults are 1 to 1 1/4 inches long. _____ have wings covering only about half the body and do not fly. Males have wings longer than the body and are excellent fliers.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Instars
- F. None of the Above

78. Females produce about 30 egg capsules, each containing about 32 to 36 eggs. This roach completes _____.

- A. Her work
- B. Nymph stage
- C. Egg laying
- D. The life cycle
- E. One generation per year
- F. None of the Above

79. Wood cockroaches are usually found in wood piles, hollow trees or under loose bark. Buildings in wooded areas are prone to have problems with wood roaches during rainy periods. Although this roach prefers to live outside, _____ are attracted to light and may enter buildings. They are sometimes brought in along with firewood, but do not usually survive or multiply inside buildings.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Dealates
- F. None of the Above

80. The _____ is slightly more than 1 inch long and is a uniform, very dark brown to black. The head shield is a solid dark color.

- A. Females
- B. Roaches
- C. Adult
- D. Adult males
- E. Nymphs
- F. None of the Above

81. Both _____ have wings longer than their bodies and are capable of flying or gliding.

- A. Dealates and Instars
- B. Roaches
- C. Adults and Instars
- D. Nymphs and Adults
- E. Males and females
- F. None of the Above

82. Nymphs are smaller than adults and have only partially developed wings. _____ usually carry their egg capsules for a day or two before attaching them to the outside surfaces of buildings and other protected sites near the ground.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Adult females
- F. None of the Above

83. These _____ live primarily outdoors and prefer wood, leaf litter, trash piles and other humid sites with abundant organic matter. They also hide under rocks, ground cover and building materials. They may enter homes with infested firewood during seasonal migrations.

- A. Females
- B. Roaches
- C. Adults
- D. Adult males
- E. Cockroaches
- F. None of the Above

Habitat

84. The Smokybrown cockroach has a great tendency to lose moisture through the cuticle and thus requires water every two to three days. These requirements are important to remember when implementing your _____.

- A. Treatment
- B. Monitoring
- C. Penetration
- D. Control program
- E. Roach extermination program
- F. None of the Above

85. This pest is most likely found in areas which are protected, moist, dark, relatively warm and free from the _____. In nature, tree holes and the canopies of palm trees offer the ideal environment in which this bug can thrive.

- A. Pesticide
- B. Dry habitat
- C. Deep penetration
- D. Desiccating effects of air flow
- E. Treatment
- F. None of the Above

Control Smokybrown Cockroaches

86. Eliminate or alter any conditions which encourage the _____ of the roaches. These pests thrive in dark, humid areas which have little or no air flow.

- A. Life cycle
- B. Moist habitat
- C. Deeper penetration
- D. Presence and/or reproduction
- E. Removal and destroying hiding areas
- F. None of the Above

87. Spray exterior of structure with Suspend SC, Demon WP or Cynoff WP. These odorless insecticides will give a quick knockdown of bugs while lasting for several weeks, usually yielding about a _____.

- A. 90 day residual
- B. 10 day residual
- C. 1 inch penetration
- D. 30 day residual
- E. 50 day residual
- F. None of the Above

88. Spray any crack, crevice or entry point on the outside of the structure. This includes treating around all windows, doors, vents and in _____ of brick veneer. Also spray tree trunks, from ground to crotch of tree, but no higher than six feet.

- A. Areas
- B. Weep holes
- C. Deep penetration
- D. Areas roaches like to hide
- E. And outside
- F. None of the Above

89. All _____ should be sprayed with insecticide. These exterior surfaces should be treated 3 to 4 times each year.

- A. Interiors
- B. Moist habitats
- C. Mulched areas
- D. Grass and bushes
- E. Roaches
- F. None of the Above

90. If necessary, _____ in the following areas: basements, garages, carports, attics, closets, laundry rooms.

- A. Trap
- B. B and G
- C. C/C
- D. Dust
- E. Spray indoors
- F. None of the Above

91. Also treat beneath and behind large appliances (refrigerators, stoves, etc.) or other areas where these _____. (Spraying all of your baseboards with any bug spray is not necessary!)

- A. Thrive in the dark
- B. Have a moist habitat
- C. Penetrate
- D. Pests live
- E. Roaches prefer to hide
- F. None of the Above

92. Indoor areas should be treated _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. 2 to 3 times per year
- E. 1 to 2 times per year
- F. None of the Above

93. Hollow blocks or other areas such as behind brick walls and along plumbing lines should be treated with _____.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

94. Although many dusts will kill roaches, _____ is water-proof and will not be destroyed by the moist habitat of the Smokybrown as would other dusts.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

95. For deeper penetration and better distribution of insecticide dust, use a _____. Delta Dust should be used once each year or as needed.

- A. Indoor areas
- B. Delta Dust
- C. Spraying
- D. Hollow blocks
- E. Crusader Duster
- F. None of the Above

Asian Cockroach *Blattella asahinai*

96. The Asian cockroach was identified as a _____ to the United States in 1986 when a professional pest control operator collected these insects in Lakeland, Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. Newly introduced species
- F. None of the Above

97. He referred to them as German cockroaches, *Blattella germanica* (L.), but noted that their behavior was unlike any other _____ that he had previously encountered. Upon further investigation the cockroaches were found to be *B. asahinai*, Asian cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

Distribution and Habits

98. The Asian cockroach was first described in 1981 from insects collected on Okinawa Island, Japan. It is most likely that _____ was introduced into the United States through imports from Japan.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. *B. asahinai*
- E. Wood cockroach(es)
- F. None of the Above

99. Since the first identification of _____ in Lakeland (Polk County), it has been reported from Marion County in central Florida to Broward County in southwest Florida.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Wood cockroach(es)
- E. *B. asahinai*
- F. None of the Above

100. The primary habitat of the _____ is outdoors in shaded mulched or composted areas, such as landscaping and gardens, where fresh plant litter accumulates.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Water bug
- E. Wood cockroach(es)
- F. None of the Above

101. Populations of 30,000 to 250,000 insects per acre have been reported. Members of this species are strong fliers, unlike their close relative, the _____.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. American cockroach(es)
- D. Polish cockroach
- E. Wood cockroach(es)
- F. None of the Above

102. They may invade structures but indoor infestations are rare occurrences. They become _____ and are attracted to light-colored surfaces and brightly lit areas.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Male tergal glands
- E. Indoor infestations
- F. None of the Above

103. _____ will take flight during the day if disturbed. The presence of this pest is obvious since their peak activity period coincides with our leisure time.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Males
- E. Indoor infestations
- F. None of the Above

Description

104. _____ are almost identical to German cockroaches. Chemical analysis by gas chromatography will confirm the species.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Wood cockroach(es)
- E. Indoor infestations
- F. None of the Above

105. However, there are also slight morphological differences between *B. asahinai* and *B. germanica*. _____ adults have longer and narrower wings than those of German cockroaches.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Black
- D. Male tergal glands
- E. Wood cockroach(es)
- F. None of the Above

106. There are also differences between _____ in the shape of the male tergal glands.

- A. Asian cockroach(es)
- B. German cockroach(es)
- C. Adults
- D. Female tergal glands
- E. The species
- F. None of the Above

107. Asian cockroach females produce _____ and nymphs are smaller than that of German cockroaches.

- A. Females
- B. Roaches
- C. Adults
- D. Smaller egg capsules
- E. Wings
- F. None of the Above

108. Asian cockroach first instars have 23 antennal segments while German cockroach first instars have 24 to 25. Finally, margins of the abdomen and spots along the abdominal midsection of *B. asahinai* late instars _____, whereas those areas are lightly pigmented in *B. germanica*.

- A. Appear red
- B. Appear white
- C. Appear black
- D. Are small
- E. Are large
- F. None of the Above

Life Cycle

109. Female Asian cockroaches have a lifetime reproductive potential for producing approximately four egg capsules, each averaging _____.

- A. 137 nymphs
- B. 100 nymphs
- C. 37 nymphs
- D. 3700 nymphs
- E. 370 nymphs
- F. None of the Above

110. Immatures take approximately 67 days to reach adulthood. Females can then live for 104 days and males can live for _____.

- A. 49 days
- B. 49 weeks
- C. 49 years
- D. 149 days
- E. 490 days
- F. None of the Above

111. Females can produce their first egg capsule _____ after adult eclosion, and can drop another 20 days later.

- A. 23 days
- B. 33 days
- C. 3 days
- D. 10 days
- E. 13 days
- F. None of the Above

112. Adults are abundant _____ and again August through September. Nymphs predominate May through August.
- A. March to June
 - B. June and July
 - C. February through May
 - D. April and May
 - E. May or June
 - F. None of the Above

Management

113. _____ of Asian cockroaches is difficult due to their mobility and abundance of population sites.

- A. Typically treatment
- B. Control
- C. Tracking
- D. Management
- E. Numerous infestations
- F. None of the Above

114. Traditional treatments using _____ inside and around the perimeter of a structure are ineffective due to numerous infestations in mulched and wooded areas.

- A. Traps
- B. Control
- C. Dusts
- D. B and G
- E. Residual sprays
- F. None of the Above

115. Plus, adults enter homes through windows and doorways, avoiding areas typically treated for _____ of German cockroaches.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Numerous infestations
- F. None of the Above

116. Sodium vapor lamps for security lighting and yellow incandescent bulbs for porch lighting are both less attractive to adults and would thereby _____ of adult insects to lighting near buildings.

- A. Typically treated
- B. Control
- C. Susceptible
- D. Less attractive
- E. Reduce attraction
- F. None of the Above

117. Although Asian cockroaches are susceptible to all pesticides, toxic pelletized baits scattered outdoors have _____.

- A. Typically been treated
- B. Been controlled
- C. Been susceptible
- D. Are less attracted
- E. Provided the most reliable control
- F. None of the Above

118. The _____ for a pesticide or herbicide to enter the body are: inhalation, skin and eye contact, ingestion, and injection.

- A. Prevention techniques
- B. Basic cycle
- C. Basic routes
- D. Direction
- E. Methods
- F. None of the Above

119. The prevention of entry by one of these routes can be accomplished by control mechanisms such as engineering controls, personal protective equipment, and _____.

- A. Prevention
- B. Basic routes
- C. Safety
- D. Can be minimized
- E. Administrative controls
- F. None of the Above

120. Each route can be minimized by a variety of _____ depending on the hazard and operation.

- A. Prevention methods
- B. Basic routes
- C. Control measures
- D. Techniques
- E. Administrative controls
- F. None of the Above

Madagascar Giant Hissing Roaches

121. The cockroach family, to which Madagascar roaches belong, is among the most primitive of the winged insects. The nearest relatives to _____ include mantids, grass-hoppers, stick insects, and termites.

- A. Bees
- B. Cockroaches
- C. Winged insects
- D. Beetles
- E. Bed bugs
- F. None of the Above

122. There are at least 3,500 known species living today, in _____, most of which originate in the tropics.

- A. 500 genera
- B. 450 genera
- C. 400 genera
- D. On this planet
- E. USA
- F. None of the Above

123. As a group, cockroaches exhibit a _____ of sizes, colors, and habits.

- A. Diurnal
- B. Small diversity
- C. Commensally
- D. Wide diversity
- E. Cornucopia
- F. None of the Above

124. Although they have an infamous reputation as household pests, in reality only about half a dozen species (less than one percent of all known forms) have _____ with humans.

- A. Diurnal skills
- B. Exhibited hostility
- C. Made friends
- D. Negative associations
- E. Toxic relationships
- F. None of the Above

125. Many species are diurnal, some are _____, and others live in the ground or are wood-boring. Some, such as the Madagascar roach, do not have wings.

- A. Intellectual
- B. Semiaquatic
- C. Hostile
- D. Scavengers
- E. Toxic
- F. None of the Above

126. About a dozen or so species live _____ in the nests of ants, wasps, or termites.

- A. Diurnal
- B. Near and
- C. Commensally
- D. As scavengers outdoors near
- E. As friends
- F. None of the Above

127. There are also roach species that inhabit caves with bats or live in the desert. The majority of cockroaches in tropical countries exist as scavengers outdoors, feeding on vegetation and organic matter in _____.

- A. Their nests
- B. The tropics
- C. Dry areas
- D. Outdoors
- E. An apparently harmless fashion
- F. None of the Above

128. The toxicity of the Thailand and Middle-Asian cobra venoms as well as of their isolated components (_____ and some others) for cockroach *Gromphadorhina portentosa* was studied.

- A. Poisons
- B. Sugars
- C. Vapors
- D. Neurotoxins, cytotoxins, phospholipases
- E. Toxic
- F. None of the Above

129. It was found that, as compared to mammals, cockroaches are _____ to cobra venoms and their components.
- A. Diurnal D. Scavengers
 B. More resistant E. Toxic
 C. Related F. None of the Above

Cockroach Management Strategies

Prevention

130. _____ of roach colonies can be prevented by close inspection of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.

- A. Entry and establishment D. Avoid unnecessary control
 B. Elimination E. Developed resistance
 C. Should not be left F. None of the Above

131. Caulking or puttying areas such as cracks and crevices around kitchen cabinets, bathtubs, water and plumbing pipes, cracks on floors and walls, and exterior windows and doors can eliminate most hiding places and _____.

- A. Cannot elevate growth D. Help reduce the cockroach population
 B. Can eliminate E. Helps develop resistance
 C. Should not be left F. None of the Above

132. Other structural modifications, such as weather stripping and pipe collars, also help to _____.

- A. Increase protection D. Avoid unnecessary growth
 B. Can eliminate E. Reduce cockroach entry and establishment
 C. Kill the pests F. None of the Above

Sanitation

133. Good housekeeping is the most important factor in preventing and _____.

- A. Cannot forgotten D. Controlling cockroach populations
 B. Elimination E. Reducing resistance
 C. Should not be left F. None of the Above

134. Cockroaches _____, water and shelter. Do not allow food particles to remain on shelves or floors.

- A. Cannot live without food D. Avoid unnecessary food stuffs
 B. Can eliminate E. Have developed resistance
 C. Storage areas should not be left F. None of the Above

135. Dishes should not be left unwashed after a meal, particularly overnight. Clean areas under refrigerators, stoves, sinks and furniture regularly to remove bits of food that have accumulated. If pets are fed indoors, _____, especially overnight. Store pet food in tight containers, and clean litter boxes frequently.

- A. Use baits D. Avoid unnecessary food
 B. Use dusts E. Teach pets to deal with the cockroaches
 C. Should not be left F. None of the Above

136. Keep all food items covered or in a refrigerator at all times between uses. Empty garbage and _____ and keep refuse in a covered container away from the residence.

- A. Burn it D. Avoid unnecessary
 B. Eliminate extra humans E. Develop control methods
 C. Should not be left F. None of the Above

137. If possible, _____. Common sources include leaking faucets and pipes, drains, toilet tanks, wash basins and sink traps, aquaria and water-filled tubs. Pets' water dishes, beverage bottles or cartons, and pipe condensation can provide an adequate water supply for roaches. Roach breeding is encouraged by clutter.

- A. Move
- B. Use dusts
- C. Call pest control
- D. Avoid unnecessary outdoor activities
- E. Use DDT
- F. None of the Above

138. Avoid unnecessary storage of corrugated paper boxes, piles of paper bags, newspaper, magazines, and _____.

- A. Concrete
- B. Beer
- C. Boric acid
- D. Metal
- E. Motor oil
- F. None of the Above

Chemical Control

139. Cockroaches have been the target of many insecticides over the years but they have _____ to several of them.

- A. Cannot escape
- B. Eliminated
- C. Evolved
- D. Learned to avoid eating
- E. Developed resistance
- F. None of the Above

140. Attempts to use pheromones as sex lures or to sterilize male cockroaches have thus far not _____ on a large scale.

- A. Proved practical
- B. Worked
- C. Impressed
- D. Proved cost effective
- E. Developed resistance
- F. None of the Above

141. _____ such as diatomaceous earth to penetrate their protective cuticles may work in individual households as a nonpoisonous alternative.

- A. Dusts
- B. Salts
- C. Sprinkling abrasives
- D. Avoid unnecessary dusting
- E. Spraying pesticides
- F. None of the Above

142. Once the cuticle is abraded, the roaches die of dehydration. Also effective is _____, which is both abrasive and poisonous to cockroaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Boric acid powder
- F. None of the Above

143. _____ cockroaches from multiplying is to keep a clean house and block their access to water, which they need to survive.

- A. Crack and crevice or C/C
- B. Drione Dust will control
- C. Application of pesticide to
- D. The best way to prevent
- E. Crusader Hand Dust will kill
- F. None of the Above

144. American cockroaches are very easy to keep and rear in the laboratory and make excellent subjects for experimentation because of their large size and _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Treatment Methods

145. The disadvantage is that the treatments need to be where the roaches are hiding. Cockroaches have been seen thriving less than a foot away from _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. A treated surface
- F. None of the Above

146. Their path of feeding and moving to and from shelter never crossed the _____. This enabled them to live virtually on top of treated areas and yet still survive.

- A. Crack and crevice or C/C
- B. Treated surfaces
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

Cracks and Crevice

147. When roaches began to build resistance to chemicals and manufacturers designed their products with less volatility, new packaging and treatment techniques became necessary. These new trends became known as "_____".

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

148. Basically, _____ means applying the chemical into the cracks and crevices suspected of harboring roaches.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

149. There are two types of products commonly used for this purpose: _____.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

150. In fact, a good pest control technician should be able to get roach control with nothing more than _____ if he or she knows where to do the application.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust
- E. Crusader Hand Duster
- F. None of the Above

151. _____ has solved many roach problems. Apply it in cracks and crevices, behind cabinets and major appliances, in wall voids and electric outlets.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

152. This requires a lot of work and this product can be messy to work with, but provides the _____ when used properly.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

153. Use a _____ for the application. Since dust can be messy to work with, aerosol products became popular throughout the 1980's.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

154. The professional line of products which is discussed are truly effective and not commonly available. Their _____ are effective because insects have not been able to build resistance.

- A. Crack and crevice or C/C
- B. Active ingredients
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

155. There are several stories of super roaches and the fact that "even the bugman" couldn't get rid of "my" roaches, but what it all boils down to is the _____ and the choice of product. If the products used are the ones as mentioned above and the treatment is thorough and complete, there is little chance of any roach surviving nor of re-infestation.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

156. Most insects, certainly roaches, cannot live where _____ has been applied. That being said, all you need to do is apply it wherever roaches want to be. This process of eliminating their nest sights eliminates their population.

- A. Crack and crevice or C/C
- B. Drione
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

157. The reason they appear to be "resistant" in most cases is that they are simply avoiding treated areas. This can happen when products are mixed at higher rates or when applicators fall victim to treating the same areas over and over again. The roaches which survive all these _____ are the ones which are going where the applicator has failed to treat.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Applications
- F. None of the Above

158. Today, these problems have been all but eliminated with the _____. These new methods are both safer and easier to do.

- A. Crack and crevice or C/C
- B. Latest treating methods
- C. Application method
- D. Dust and aerosol
- E. Crusader Hand Duster
- F. None of the Above

159. Although _____ has long been the main method to get roach control, baiting has become a legitimate method as new baits hit the market. These products have been tested and proven effective.

- A. Crack and crevice or C/C
- B. Drione Dust
- C. Application method
- D. Dust and aerosol
- E. Spraying
- F. None of the Above

Residual Sprays

160. These formulations are oil-based or water-based emulsions and water-based suspensions (_____). They are available in ready-to-use pressurized containers or non-pressurized containers with built-in spray pumps.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

161. _____ also can be purchased as concentrates to mix with water before applying with a compressed-air sprayer, plunger-type sprayer or paint brush.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

162. Be careful when using _____; they may stain, dull or damage certain floor tiles, linoleum, painted surfaces, plaster, plastics, houseplants, carpets and carpet backing.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

163. _____ can create a fire hazard when used near an open flame (pilot lights, gas stoves, furnaces). Water emulsions may stain wallpaper, light-colored carpets, draperies or other materials.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

164. They can short out electrical circuits, and are inferior to _____ on impervious surfaces such as glass or metal.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

165. _____ must be frequently agitated in the spray tank, but they leave the most active residues, especially on porous surfaces such as unpainted wood, mortar or concrete block.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

166. _____ are generally easy and fast to apply. The spray should wet or dampen the treated surface; do not allow spray to puddle or run off. When treating for cockroaches, pay particular attention to cracks and crevices. Exposed surfaces, especially those used to prepare foods, should usually not be treated with sprays.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based insecticides
- E. Oil-based sprays
- F. None of the Above

Dusts

167. _____ sometimes suffices as the only treatment for cockroaches, but is most often a supplemental treatment.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Insecticide dust
- F. None of the Above

168. _____ generally have longer residual action than sprays, but are ineffective if they become damp.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

169. Dusts are useful in cockroach control because they can be placed deep in cracks, crevices and wall voids; under refrigerators and furniture; around pipes, tunnels and conduits; on very smooth or very rough surfaces; and in other places not treatable with _____.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Other formulations
- F. None of the Above

170. Do not use dusts for treating large surfaces because they leave unsightly deposits. Also, cockroaches avoid _____ and will not walk through thick layers of the material.

- A. Residual sprays
- B. Wettable powders
- C. Heavy deposits
- D. Oil-based
- E. Baits
- F. None of the Above

171. Use light pressure on the application device to minimize the amount of dust in living areas. Apply _____ as light, even residues that are barely visible.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

Baits

172. Several cockroach _____ are sold in ready-to use containers. They also can be made using a combination of food attractants and a toxicant. If cockroaches will not feed on the bait, the insecticide has no effect.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

173. Thus, it is important not to contaminate stored _____ with organic solvents, other insecticides, fungicides and fertilizers.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Bait
- F. None of the Above

174. Baits are usually long lasting and often work well in areas that cannot be effectively sprayed or dusted. _____ are often most useful when used in conjunction with a residual spray or dust.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

175. _____ give best results in buildings where there are few alternative food supplies.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

176. Always use a sufficient number of _____ to adequately treat an area where cockroaches are to be controlled. Examine the bait containers frequently to ensure they remain fresh and the bait is not depleted.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Bait containers
- E. Baits
- F. None of the Above

177. Baits have always been available, but roaches seemed to be indifferent to them. Although some roaches would feed and die, it was not likely that you would be able to _____ with baits alone. Now, we have products like Maxforce and Avert. These materials are deadly for roaches.

- A. Residual sprays
- B. Wettable powders
- C. Dusts
- D. Control infestations
- E. Baits
- F. None of the Above

178. If you spray several properties or apartments and intend on doing a lot of baiting you should consider getting the _____ . It uses the same Maxforce Gel in smaller cartridges which are loaded in the gun allowing for precise controlled applications and placements.

- A. Maxforce Bait Gun
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

179. They have been formulated with attractants which roaches cannot resist. You should be able to get complete control in homes, apartments and townhouses without having to do any _____ . The advantage of these products is that you are able to apply them with a minimum of preparation.

- A. Spraying
- B. Wettable powders
- C. Dusts
- D. Oil-based
- E. Baits
- F. None of the Above

180. If you are careful, you should be able to apply Maxforce without having to remove anything from cabinets. _____ comes in an aerosol can which enables you to deliver the bait deep in wall voids where the roaches are hiding. The amazing thing about these products is that roaches love them to death.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

181. In fact, roaches will ignore bait placements that have been made over treated surfaces, so make sure to apply Maxforce or Avert where you are certain _____ has been applied. In general, make your placements about 2 – 3 feet apart.

- A. Spray
- B. Avert
- C. No residual pesticide
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

182. In the average cabinet, you will need to make 6-8 placements with Maxforce. Since Maxforce comes out like toothpaste, it is difficult to penetrate voids with it. Use _____ for these hard to penetrate nest sites.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

183. Avert is a different flavor than _____ and when the two are used together, you will get the quickest results. This is achieved because you are offering the insects a variety of food.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

184. By having _____ , the roaches are more likely to find one of the products. Since roaches will change their diet, having an option ensures they will find one if they don't like the other.

- A. Spray
- B. Avert
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides
- F. None of the Above

Aerosols

185. Aerosol insecticides may or may not have _____ .

- A. Spray power
- B. Residual activity
- C. Dusts
- D. Maxforce
- E. Aerosol insecticides strength
- F. None of the Above

186. A non-residual spray alone may not provide a high degree of control, but when used with a _____, a high degree of control can be achieved.

- A. Spray
- B. Avert
- C. Dusts
- D. Residual spray or dust
- E. Aerosol insecticides
- F. None of the Above

187. _____ are useful for determining the location and extent of a cockroach infestation. Small amounts of pesticide applied to hidden areas and shelters force cockroaches to evacuate and move across previously treated surfaces.

- A. Sprays
- B. Avert
- C. Dusts
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

188. Residual aerosols should be used in the same manner as other types of _____.

- A. Sprays
- B. Residual sprays
- C. Dusts
- D. Residual aerosols
- E. Aerosol insecticides
- F. None of the Above

Inorganic insecticides

189. Boric acid and powders of _____ and diatomaceous earth are examples of inorganic insecticides that can be used effectively for cockroach control in homes.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

190. These _____ to humans and pets, and retain their effectiveness long after initial application. Usually, a longer period of time is required to achieve control, but reapplications are greatly reduced.

- A. Silica aero gel is safe
- B. Chemicals
- C. Boric acid is safe
- D. Non-residual aerosols are safe
- E. Chemicals are low in toxicity
- F. None of the Above

191. Apply boric acid, silica aero gel or _____ in a light film to cracks and crevices and other cockroach hiding places. Avoid applications to moist or damp areas, especially when using silica aero gel or diatomaceous earth.

- A. Silica aero gel
- B. Diatomaceous earth
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

192. If cockroaches become established, _____ may be needed in combination with good sanitary practices.

- A. Silica aero gel
- B. Chemical control
- C. Boric acid
- D. Non-residual aerosols
- E. Aerosol insecticides
- F. None of the Above

Insect Growth Regulators

193. Some synthetic _____ mimic natural hormones found in insects. When applied to cockroaches during their early developmental stages, they cause nymphs to molt into sterile adults.

- A. Compounds
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

194. _____ have low human toxicity, but have long residual effectiveness.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

195. For best results they must be applied along with residual insecticides to eliminate existing adults or other non-susceptible stages. Over-all population reduction with _____ usually takes several months.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

Roach Traps

196. Regardless of the treatment method you choose, another tool which can be a great help when treating roach infestations is the _____.

- A. Silica aero gel
- B. Chemicals
- C. Use of Roach Traps
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

197. These rely on _____ to attract all types of roaches but they work particularly well for German and several of the large roach species.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Roach pheromones
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

198. Place them where roaches have been seen. The _____ will attract males ready to reproduce, females in search of nest sights (the odors emitted signal a roach gathering place or nest) and young roaches which are looking for a colony to mix and mingle.

- A. Silica aero gel
- B. Chemical
- C. Pheromones
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

Trapping

199. Several types of _____ are commercially available. Traps capture roaches, and are a good monitoring device. While the traps can be useful to reduce light infestations, they do not effectively control heavy cockroach infestations.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Cockroach traps
- F. None of the Above

200. Place _____ against a vertical surface, preferably a corner, where cockroaches are usually found. They are most effective when placed under sinks, in cabinets, near the kitchen stove or refrigerator, in basement corners or near floor drains.

- A. Silica aero gel
- B. Chemicals
- C. Boric acid
- D. Insect growth regulators or (IGRs)
- E. Monitoring device(s) or Trap(s)
- F. None of the Above

You are finished with your assignment, please fax or e-mail a copy of your driver's license and the Answer Key and Registration form. Always call us the next day to ensure we received all your information.

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