Registration form

Advanced Pest Control $300.00

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 2 & 4. Signature is required. You can electronically sign with XXX

Signature _____

Address: _____

City_____ State _____Zip_____

Phone:
Home (____)_____ Work (____)_____

Fax (____)_____ Email_____

License ID #_____Exp. Date_____

Class/Grade_____

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

Commercial Applicator___ Residential Applicator___ Industrial Applicator___

Pesticide Handler___ Agricultural Applicator___ Adviser___ Other _____

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

If you have paid on the Internet, please write your Customer #_____
4 or 5 digit number

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 a 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. ALWAYS FOLLOW THE PRODUCT'S LABEL INSTRUCTIONS.

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 conditions and that I will not hold Technical Learning College, Technical Learning Consultants, Inc. (TLC) liable 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. 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.

CUSTOMER SERVICE RESPONSE CARD

Advanced Pest Control Training Course

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.

_____

_____

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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.abctlc.com/downloads/PDF/CEU%20State%20Approvals.pdf

You can obtain a printed version of the course manual from TLC for an additional $199.95 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 have received your assignment and to confirm your identity.

Thank you…

Advanced Pest Control Answer Key

Name_____

Phone# _____

Multiple Choice. Pick only one answer per question. Circle or Mark off, Underline or Bold the answer.

Did you check with your State agency to ensure this course is accepted for credit? No refunds.

Method of Course acceptance confirmation. Please fill this section

Website __ Telephone Call___ Email____ Spoke to_____

Did you receive the approval number, if applicable? _____

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

I understand that I am 100 percent responsible to ensure that TLC receives the Assignment and Registration Key. I understand that TLC has a zero tolerance towards not following their rules, cheating or hostility towards staff or instructors. I need to complete the entire assignment for credit. There is no credit for partial assignment completion. My exam was proctored. I will contact TLC if I do not hear back from them within 2 days of assignment submission. I will forfeit my purchase costs and will not receive credit or a refund if I do not abide with TLC's rules. I will not hold TLC liable for any errors or damages or death. I wil abide with pages 2 and 4.

California DPR Requirement

The Assignment must be submitted to TLC by December 27 in order to be submitted to DPR by the 30th. If it is late, you will be penalized $50 per day.

Please Sign that you understand and will abide with TLC's Rules.

_____

Signature

Advanced Pest Control - Exam Version – Circle or underline **1 2 3 4 5**			
Topic 1 - Pesticide Section			
1. A B C D	**6.** A B C D	**11.** A B C D	**16.** A B C D
2. A B C D	**7.** A B C D	**12.** A B C D	**17.** A B C D
3. A B C D	**8.** A B C D	**13.** A B C D	**18.** A B C D
4. A B C D	**9.** A B C D	**14.** A B C D	**19.** A B C D
5. A B C D	**10.** A B C D	**15.** A B C D	**20.** A B C D
Topic 2 - EPA Requirement Training Section			
1. A B C D	**6.** A B C D	**11.** A B C D	**16.** A B C D
2. A B C D	**7.** A B C D	**12.** A B C D	**17.** A B C D
3. A B C D	**8.** A B C D	**13.** A B C D	**18.** A B C D
4. A B C D	**9.** A B C D	**14.** A B C D	**19.** A B C D
5. A B C D	**10.** A B C D	**15.** A B C D	**20.** A B C D
Topic 3 - Bees and Bee-Like Insects			
1. A B C D	**4.** A B C D	**7.** A B C D	**10.** A B C D
2. A B C D	**5.** A B C D	**8.** A B C D	
3. A B C D	**6.** A B C D	**9.** A B C D	
Topic 4 - Mosquito Section			
1. A B C D	**6.** A B C D	**11.** A B C D	**16.** A B C D
2. A B C D	**7.** A B C D	**12.** A B C D	**17.** A B C D
3. A B C D	**8.** A B C D	**13.** A B C D	**18.** A B C D
4. A B C D	**9.** A B C D	**14.** A B C D	**19.** A B C D
5. A B C D	**10.** A B C D	**15.** A B C D	**20.** A B C D

Topic 5 - Mosquito Identification Section			
1. A B C D	**5.** A B C D	**9.** A B C D	**13.** A B C D
2. A B C D	**6.** A B C D	**10.** A B C D	**14.** A B C D
3. A B C D	**7.** A B C D	**11.** A B C D	**15.** A B C D
4. A B C D	**8.** A B C D	**12.** A B C D	
Topic 6 – Wood Destroyers -Termite Section			
1. A B C D	**6.** A B C D	**11.** A B C D	**16.** A B C D
2. A B C D	**7.** A B C D	**12.** A B C D	**17.** A B C D
3. A B C D	**8.** A B C D	**13.** A B C D	**18.** A B C D
4. A B C D	**9.** A B C D	**14.** A B C D	**19.** A B C D
5. A B C D	**10.** A B C D	**15.** A B C D	**20.** A B C D
Topic 7 – Termite and Wood Destroyers -Management Section			
1. A B C D	**5.** A B C D	**9.** A B C D	**13.** A B C D
2. A B C D	**6.** A B C D	**10.** A B C D	**14.** A B C D
3. A B C D	**7.** A B C D	**11.** A B C D	**15.** A B C D
4. A B C D	**8.** A B C D	**12.** A B C D	
Topic 8 – Wood Borers- Beetles Section			
1. A B C D	**6.** A B C D	**11.** A B C D	**16.** A B C D
2. A B C D	**7.** A B C D	**12.** A B C D	**17.** A B C D
3. A B C D	**8.** A B C D	**13.** A B C D	**18.** A B C D
4. A B C D	**9.** A B C D	**14.** A B C D	**19.** A B C D
5. A B C D	**10.** A B C D	**15.** A B C D	**20.** A B C D
Topic 9 – Arachnid -Spider Section			
1. A B C D	**4.** A B C D	**7.** A B C D	**10.** A B C D
2. A B C D	**5.** A B C D	**8.** A B C D	
3. A B C D	**6.** A B C D	**9.** A B C D	

Topic 10- Spider Identification Section			
1. A B C D	**4.** A B C D	**7.** A B C D	**10.** A B C D
2. A B C D	**5.** A B C D	**8.** A B C D	
3. A B C D	**6.** A B C D	**9.** A B C D	
Topic 11- Web Spider Section			
1. A B C D	**4.** A B C D	**7.** A B C D	**10.** A B C D
2. A B C D	**5.** A B C D	**8.** A B C D	
3. A B C D	**6.** A B C D	**9.** A B C D	
Topic 12 -Tick Section			
1. A B C D	**4.** A B C D	**7.** A B C D	**10.** A B C D
2. A B C D	**5.** A B C D	**8.** A B C D	
3. A B C D	**6.** A B C D	**9.** A B C D	
Topic 13- Tick Identification Section			
1. A B C D	**4.** A B C D	**7.** A B C D	**10.** A B C D
2. A B C D	**5.** A B C D	**8.** A B C D	
3. A B C D	**6.** A B C D	**9.** A B C D	
Topic 14 - Cockroach Section			
1. A B C D	**5.** A B C D	**9.** A B C D	**13.** A B C D
2. A B C D	**6.** A B C D	**10.** A B C D	**14.** A B C D
3. A B C D	**7.** A B C D	**11.** A B C D	**15.** A B C D
4. A B C D	**8.** A B C D	**12.** A B C D	
Topic 15 - Cockroach Classification Section			
1. A B C D	**5.** A B C D	**9.** A B C D	**13.** A B C D
2. A B C D	**6.** A B C D	**10.** A B C D	**14.** A B C D
3. A B C D	**7.** A B C D	**11.** A B C D	**15.** A B C D
4. A B C D	**8.** A B C D	**12.** A B C D	

Topic 16 - Cockroach Inspection and Treatment Section			
1. A B C D	**5.** A B C D	**9.** A B C D	**13.** A B C D
2. A B C D	**6.** A B C D	**10.** A B C D	**14.** A B C D
3. A B C D	**7.** A B C D	**11.** A B C D	**15.** A B C D
4. A B C D	**8.** A B C D	**12.** A B C D	
Topic 17- Pesticide Application Section			
1. A B C D	**6.** A B C D	**11.** A B C D	**16.** A B C D
2. A B C D	**7.** A B C D	**12.** A B C D	**17.** A B C D
3. A B C D	**8.** A B C D	**13.** A B C D	**18.** A B C D
4. A B C D	**9.** A B C D	**14.** A B C D	**19.** A B C D
5. A B C D	**10.** A B C D	**15.** A B C D	**20.** A B C D

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.

When finished with your assignment.

Please scan the Registration Page, Answer Key and Driver's License and email it to info@TLCH2O.com.

If you are unable to scan, take a photo of these documents with your iPhone and send these to TLC, info@TLCH2O.com.

If you are unable to scan and email, please fax these to TLC,

(928) 468-0675
If you fax, call to confirm that we received your paperwork.

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.

Assignment for Last Names

If your last name…

A-G Assignment #1 - Pages 1, 3, 5-9, 11-41
H-M Assignment #2 - Pages 1, 3, 5-9, 43-73
N-S Assignment #3 - Pages 1, 3, 5-9, 75-104
T-Z Assignment #4 - Pages 1, 3, 5-9, 105-135
Repeat students Alternative Ass #5 for - Pages 1, 3, 5-9, 137-167

These exams are frequently rotated.
Complete all topics before submitting the answers key.

Advanced Pest Control Assignment #1 A-G Last Names

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 80%. 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.

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.

Topic 1 -Pesticide Section

1. Most pesticides create risk of harm to humans, animals, or the environment because they are designed to kill or otherwise harmfully affect living organisms. At the same time, pesticides are useful to society because of their ability to kill potential disease-causing organisms and control insects, weeds, and other pests.
A. TRUE B. FALSE

2. _____, such as pheromones and microbial pesticides are becoming increasingly popular and often are safer than traditional chemical pesticides.
A. Infection control activities C. Biologically-based pesticides
B. IGRs D. None of the above

3. _____used to control diseases of humans or animals (such as livestock and pets) are not considered pesticides and are regulated by the Food and Drug Administration.
A. Drugs C. Biochemical pesticide(s)
B. Biological control agent(s) D. None of the above

4. Fertilizers, nutrients, and other material used to promote plant survival and health are not considered plant growth regulators and thus are_____.
A. Biochemical pesticide(s) C. Biological control agent(s)
B. Not pesticides D. None of the above

5. _____, excluding certain microorganisms, are exempted from regulation by the EPA. (Biological control agents include beneficial predators such as birds or ladybugs that eat insect pests.)
A. Biochemical pesticide(s) C. Insect growth regulator (IGR)
B. Biological control agent(s) D. None of the above

6. The term ‘‘service technician’’ means any individual who uses or supervises the use of pesticide(s) for the purpose of providing structural pest control or lawn pest control on the property of another for a fee.
A. TRUE B. FALSE

7. The term ‘‘service technician’’ does not include people who use_____ , sanitizers or disinfectants; or who otherwise apply ready to use consumer products pesticides.
A. Structural pest control or lawn pest control
B. Antimicrobial pesticides
C. Biochemical pesticide(s)
D. None of the above

8. _____ are used as disinfectants in medical settings, where they are present in products used in cleaning cabinets, floors, walls, toilets, and other surfaces.
A. Chitin synthesis inhibitor(s)
B. Microbial pesticide(s)
C. Antimicrobial public health pesticides
D. None of the above

9. Proper utilization of these _____is an important part of infection control activities employed by hospitals and other medical establishments.
A. Disinfectants
B. Microbial pesticide(s)
C. Biochemical pesticide(s)
D. None of the above

10. _____ are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals.
A. Insect growth regulator (IGR)
B. Microbial pesticide(s)
C. Biopesticides
D. None of the above

11. _____ consist of a microorganism as the active ingredient. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pest[s].
A. Chitin synthesis inhibitor(s)
B. Microbial pesticide(s)
C. Biochemical pesticide(s)
D. None of the above

12. _____ are pesticidal substances that plants produce from genetic material that has been added to the plant.
A. Insect growth regulator (IGR)
B. Microbial pesticide(s)
C. Plant-Incorporated-Protectants (PIPs)
D. None of the above

13. _____ are naturally occurring substances that control pests by non-toxic mechanisms. Conventional pesticides, by contrast, are generally synthetic materials that directly kill or inactivate the pest.
A. Chitin synthesis inhibitor(s)
B. Plant-Incorporated-Protectants (PIPs)
C. Biochemical pesticide(s)
D. None of the above

14. _____ include substances, such as insect sex pheromones that interfere with mating as well as various scented plant extracts that attract insect pests to traps.
A. Chitin synthesis inhibitor(s)
B. Insect growth regulator (IGR)
C. Biochemical pesticide(s)
D. None of the above

15. _____ is a synthetic chemical that mimics insect hormones. Hormones regulate a wide array of body and growth (physiological) functions.
A. Insect growth regulator (IGR) C. Antimicrobial pesticides
B. Microbial pesticide(s) D. None of the above

16. _____ may hinder molting, pupal emergence, or body wall formation.
A. Chitin synthesis inhibitor(s) C. Biochemical pesticide(s)
B. IGR D. None of the above

17. _____are often specific for an insect species or a group of very closely related species. They often have delayed effects because they are taken into the insect and stored until the insect reaches the right growth stage. This may range from days to weeks or even months.
A. IGR C. Antimicrobial pesticides
B. Microbial pesticide(s) D. None of the above

18. _____ work by preventing the formation of chitin, a carbohydrate needed to form the insect's exoskeleton. With these inhibitors, an insect grows normally until it molts.
A. Chitin synthesis inhibitor(s) C. Biochemical pesticide(s)
B. Insect growth regulator (IGR) D. None of the above

19. The _____ prevent the new exoskeleton from forming properly, causing the insect to die. Death may be quick, or take up to several days depending on the insect.
A. Inhibitor(s) C. Biochemical pesticide(s)
B. Insect growth regulator (IGR) D. None of the above

20. _____ can also kill eggs by disrupting normal embryonic development.
A. Biochemical pesticide(s) C. Biochemical pesticide(s)
B. Chitin synthesis inhibitor(s) D. None of the above

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Topic 2 - EPA Requirement Training Section

1. _____must be trained on pesticide safety before they begin working at your grow operation.
A. Handler(s) C. All workers and handlers
B. Agricultural Employer(s) D. None of the Above

Which Pesticides Uses are Covered?
2. Most pesticide uses involved in the production of agricultural plants on a farm, forest, nursery, or greenhouse are covered by the WPS. This includes pesticides used on plants, and pesticides used on the soil or planting medium the plants are (or will be) grown in. Both general-use and restricted-use pesticides are covered by the_____ .
A. Labeling C. WPS
B. Training D. None of the Above

Decontamination Supplies and Requirements

3. 2 part question- Workers, handlers and early-entry workers must have adequate water for routine washing, soap and sufficient paper towels. Where there is no running water, early-entry workers and handlers must have at least _____ gallons of water for one employee and _____ gallons of water for two or more employees. The water must be of a "quality and temperature" that will not cause illness or injury.

A. 1- 10 C. 10-20
B. 5-25 D. None of the Above

4. All permanent mixing/loading sites regardless of whether or not the label requires_____.

A. Protective eyewear C. Permanent decontamination station(s)
B. Emergency eyewash D. None of the Above

5. Handlers must have a clean change of clothes -- such as _____ -- to put on in case their clothes become contaminated.

A. Coveralls C. Normal Clothes
B. Bloomers D. None of the Above

6. Handlers and early-entry workers must also carry _____ of water with them (or it must be "immediately" nearby on their vehicle) for emergency eyeflushing when the pesticide label requires protective eyewear (goggles or faceshield).

A. A pint C. 2 pints
B. A gallon D. None of the Above

WPS Requires Providing Decontamination Sites

7. A decontamination site must be within a _____ mile of the employees' work site.

A. 1/10 C. 1/2
B. 1/4 D. None of the Above

8. Decontamination supplies, however, need **not** be provided to _____ workers.

A. Contact early-entry C. No-contact early-entry
B. Short-term early-entry D. None of the Above

Decontamination Supply Requirements

9. Employers must make sure to provide handlers with decontamination supplies for _____and pesticide residues while they are performing handling tasks and to workers who are in a pesticide-treated area and are performing tasks that involve contact with anything that has been treated with pesticides, including soil, water, or plant surfaces.

A. Washing off pesticides C. Mix, load, or apply agricultural pesticide(s)
B. Work D. None of the Above

10. Supplies must be located within ¼ mile of the work area if a WPS-labeled pesticide has been used within _____ days, except in those cases where low-risk pesticides (those with REIs of four hours or less) are used.

A. 72 C. 30
B. 4 D. None of the Above

11. Supplies must be provided at the mixing site and within ¼ mile of the application area. Supplies may be in the application area if protected from drift and spray residues. Supplies must include the following: Water—a minimum of _____gallons per handler or a potable source of tap water
A. 5 C. 3
B. 10 D. None of the Above

12. _____ if the pesticides used require protective eyewear as stated on the label; potable water may be used as eyewash
A. Decontamination site C. All permanent mixing/loading sites
B. Emergency eyewash D. None of the Above

Emergency Information
13. Provide to the worker or handler or to treating medical personnel, promptly upon emergency vehicle, request, any obtainable information on: product name, EPA registration number, and active ingredients for any product(s) to which the person may have been exposed, antidote, first aid, _____and other medical or emergency information from the product labeling, description of the way the pesticide was being used, circumstances of the worker's or handler's exposure to the pesticide.
A. Emergency assistance C. Requirements in the standard
B. Statement of practical treatment D. None of the Above

14. If there is reason to believe that a worker has been poisoned or injured by pesticides, the employer must make prompt transportation to a medical facility available to the worker. On request the employer must provide, to either the worker or medical personnel providing treatment, information about the product including the EPA registration number, active ingredients in any product the worker might have been exposed to in the past _____ days, antidote and other first aid information from the product labeling, and information about the application and the exposure of workers to the pesticide.
A. 30 C. 7
B. 45 D. None of the Above

Restrictions During Application
15. The handler employer must assure that: No pesticide is applied so as to contact any worker (directly or through _____) other than an appropriately trained and equipped handler.
A. Drift C. Dusts
B. Droplets D. None of the Above

Oral Warnings to Workers
16. Oral warnings must include the location and description of the treated area.
A. True B. False

17. Oral warnings might include the the time during which entry is restricted.
A. True B. False

18. Oral warnings must include the instructions not to enter the treated area until the restricted-entry interval has expired.
A. True B. False

19. Provide hand sign warnings to workers in a manner that they can understand.
A. True B. False

20. Workers who are on your establishment at the start of an application must be orally warned **before the application takes place**.
A. True B. False

Topic 3- Bees and Related Bee-Like Insects

Identifying characteristics for the family Halictidae include:
1. In many species, the tongue is long and pointed, adapted for probing into flowers. All bees are covered with hair, to which pollen sticks when flowers are visited; most female bees have apparatus for gathering this pollen; it is combed into a special basket or brush located on the hind legs.
A. True B. False

Mason Bee
2. Smaller than a honeybee, mason bees resemble _____more than Honeybees.
A. Bumble bees C. Flies
B. Mosquitoes D. None of the above

3. Mason bees are native to _____.
A. North America C. Europe
B. South America D. None of the above

Orchid Bee Not to be confused with Orchard Bee
4. Male orchid bees have uniquely modified legs which are used to collect and store different volatile compounds throughout their lives, primarily from orchids in the sub-tribes Stanhopeinae and Catasetinae, where all species are exclusively pollinated by_____.
A. Ergonime males C. Females
B. Euglossine males D. None of the above

5. The male Eufriesea purpurata is highly unusual in actively collecting the _____in huge amounts from houses in Brazil, without suffering any harm from it.
A. Insecticide DDT C. Toxic dust
B. Pollen D. None of the above

Cuckoo Bee
6. Look for cuckoo bees flying low over the ground and foliage, hunting for foraging and nesting potential victims.
A. True B. False

7. Many cuckoo bees are closely related to their hosts, and may bear similarities in appearance reflecting this relationship. This common pattern gave rise to the ecological principle known as "_____".
A. Price's law C. Johnson standard
B. Emery's Rule D. None of the above

8. The queen bumble bee comes out of hibernation every _____to find a new spot to build her nest and start a new colony.
A. Spring C. Summer
B. Full moon D. None of the above

9. The queen bee is fertilized the previous season and has managed to live through the winter months. The same nesting spots from previous seasons are rarely used.
A. True B. False

10. A suitable place for nesting is usually on the ground, beneath a flat object. An old mouse hole or similar hole in the ground is preferred if it is underneath an old tarp, flat stone or man-made objects such as a deck. The hole chosen by the queen bee is first padded by pieces of vegetation such as dry grass or moss.
A. True B. False

Topic 4- Mosquito Section

Integrated Pest Management -Introduction

1. IPM is a science-based and common-sense approach for_____, vectors, such as mosquitoes.
A. Managing pests C. Pest monitoring
B. Surveillance D. None of the above

2. IPM relies heavily on resident education and _____.
A. Pests and vectors C. Pest monitoring
B. Pest prevention D. None of the above

3. _____ is an important component to any successful IPM program because the results from the surveillance will help determine the appropriate response to an infestation.
A. Surveillance C. Lower levels of infestations
B. Pest prevention D. None of the above

4. Once mosquitoes have landed, they rely on _____to determine if we are an acceptable blood meal host.
A. Transient waters C. A number of short-range attractants
B. Torpor D. None of the above

5. Mosquitoes that hibernate in the adult stage live for 6-8 months, but spend most of that time in a_____.
A. Its life cycle C. State of torpor
B. Cocoon D. None of the above

6. Aedes adults will oviposit near the edge of the swamp or within tussocks of vegetation, requiring later flooding to _____.
A. Begin its life cycle C. Inundate the eggs for hatching
B. Look for a blood meal D. None of the above

Mosquito Life Cycle Section

7. The type of standing water in which the mosquito chooses to lay her _____depends upon the species.

A. Nest C. Eggs
B. Raft D. None of the above

8. Sections of marshes, swamps, clogged ditches, and temporary pools and puddles are all prolific mosquito breeding sites. Other locations in which some species lay their _____ include tree holes and containers such as old tires, buckets, toys, potted plant trays, and saucers and plastic covers or tarpaulins.

A. Nest C. Eggs
B. Raft D. None of the above

9. The mosquito goes through three distinct stages during its life cycle.

A. TRUE B. FALSE

Wrigglers and Tumblers

10. After the female mosquito obtains a blood meal, she lays her eggs directly on the surface of stagnant water, in a depression, or on the edge of a container where rainwater may collect and flood the eggs.

A. TRUE B. FALSE

11. The larva lives in the water, feeds, and develops into the third stage of the life cycle called a pupa or "_____".

A. Ergatoids C. Wrigglers
B. Tumbler D. None of the above

12. Mosquitoes may overwinter as eggs or,_____.

A. Fertilized adult females or larvae C. Wriggler
B. Ergatoids D. None of the above

13. Mosquitoes belonging to the genus Culex lay their _____ in bunches or "rafts."

A. Tumblers C. Eggs
B. Cocoons D. None of the above

Weather

14. Mosquito development and population dynamics are closely tied to weather. When and how much rain is received, wind speed and direction, maximum and minimum temperatures, and the total amount of heat energy accumulated are all critical to mosquito development.

A. TRUE B. FALSE

Water Source

15. The water (or lack thereof) in a habitat directly does not affects mosquito reproduction. Very few mosquitoes need standing water to complete their development.

A. TRUE B. FALSE

16. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.
A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

17. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.
A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

18. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.
A. Out-of-doors at night C. Northern half
B. Southern parts D. None of the above

19. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.
A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

20. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

Topic 5- Mosquito Identification Section

1. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.
A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

2. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.
A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

3. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.
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4. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.
A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

5. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

6. Malaria was a serious plague in the United States for centuries until its final eradication in the 1950s. Despite the ostensible eradication, there are occasional cases of autochthonous (local) transmission in the U.S. vectored by An. quadrimaculatus in the east and Anopheles freeborni in the west.
A. True B. False

7. Culex pipiens can be found in a fairly limited range of larval habitats, but are generally associated with water that has a low organic content.
A. True B. False

8. Culex pipiens' main host is wild donkeys, but it also feeds freely on a wide variety of warm-blooded vertebrates, including birds.
A. True B. False

9. Culex pipiens is a serious pest, called the "house mosquito" because it commonly develops in small containers around the home. It shows great skill in finding ways to get into the house, where it feeds on_____.
A. Birds C. Effluent from sewage treatment plants
B. The occupants at night D. None of the above

10. Culex tarsalis breeds in nearly every freshwater source except _____. Larvae are found in all but the most polluted ground pools.
A. Treeholes C. Effluent from sewage treatment plants
B. Ground water D. None of the above

11. Culex tarsalis is the most important carrier of _____ in much of the western U.S.
A. WEE C. Western equine and Saint Louis encephalitis
B. Malaria D. None of the above

12. As mosquitoes go, the Western Encephalitis Mosquito is one of the more easily recognizable, with its _____.
A. Distinctive scale patterns C. High pitched scream
B. Distinct ring around the proboscis D. None of the above

13. Species in the genus Culex are known as “snowpool” mosquitoes.
A. True B. False

14. Woodland Malaria mosquitoes have four life stages: egg, larva, pupa, and adult. The immature stages need standing water to complete their life cycle.
A. True B. False

Effective Mosquito-Control Program
15. Initial surveys identify the species of mosquitoes present and provide general information on locations, densities and disease potential.
A. True B. False

Topic 6- Wood Destroyers- Termite Section

Feeding Habits

1. Termites feed primarily upon wood and wood products containing _____.
A. Moisture C. Fungi
B. Cellulose(s) D. None of the above

2. Termites have distinct protozoa in their intestine that provide enzymes to digest _____.
A. Moisture C. Wood
B. Cellulose(s) D. None of the above

Below Ground Termite Colonies

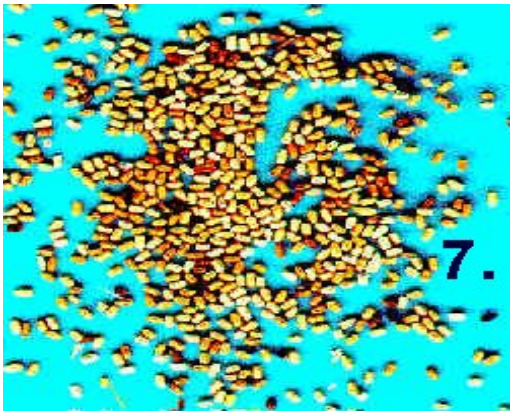
3. The colony may be up to _____ deep in the ground. The ground serves as a protection against extreme temperatures and provides a moisture reservoir.
A. 18-20 inches C. 18-20 feet
B. 8-12 feet D. None of the above

4. Termites obtain wood or _____ above ground by constructing and traveling through earthen (mud) tubes?
A. Nest C. Mud
B. Cellulose materials D. None of the above

5. These are _____?
A. Soldiers
B. Workers
C. Swarmers
D. None of the above

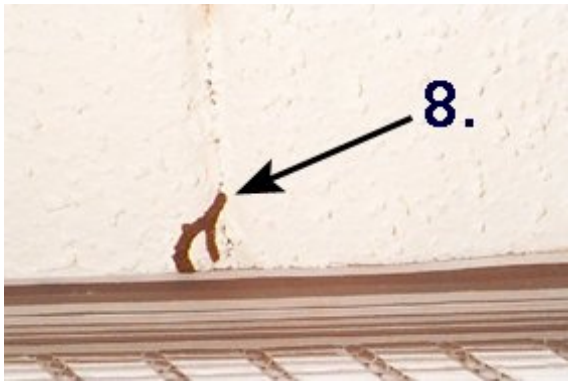
6. These are?
A. Workers
B. Frass
C. Alates
D. None of the above

7. These are?
A. Mud Holes
B. Frass
C. Eggs
D. None of the above



8. This is ?
A. Mud Tube
B. Castle
C. Entry
D. None of the above

9. This is ?
A. Mud Tubes
B. Erosion
C. Exits
D. None of the above



Above Ground Termite Colonies

10. Which of the following do not need a connection to soil and there is no soil in their feeding galleries? They do not build mud tunnels; they construct large, irregular galleries that run across and with the wood grain, with a very smooth, clean, and sandpaper-like appearance.

A. Drywood termites
B. Desert subterranean termite(s)
C. Western subterranean termite(s)
D. None of the above

Workers

11. The first broods of newly hatched nymphs (young termites) generally develop into _____.

A. Soldier(s)
B. Worker(s)
C. Alates
D. None of the above

Termite Identification Section

12. Which of the following is native to most forest areas where it performs the important task of breaking down the large quantities of dead and fallen trees and other sources of cellulose that continuously accumulate in the forests?

A. Formosan termite(s)
B. Desert subterranean termite(s)
C. Western subterranean termite(s) or Subterranean
D. None of the above

13. Which of the following termites are responsible for guarding the colony and its occupants? Termites continually groom each other to obtain certain secretions. These secretions help regulate the number of individuals in the various castes.

A. Soldier(s)
B. Worker(s)
C. Alates
D. None of the above

14. Which of the following do not need a connection to soil and there is no soil in their feeding galleries? They do not build mud tunnels; they construct large, irregular galleries that run across and with the wood grain, with a very smooth, clean, and sandpaper-like appearance.

A. Formosan termite(s)
B. Drywood termite(s)
C. Western subterranean termite(s) or Subterranean
D. None of the above

15. Which of the following have three primary castes: nymphs, reproductives and soldiers. The reproductive, also known as alates, are often up to ¾-inches long and have dark-brown wings and dark-brown bodies? Nymphs are cream colored and soldiers have brownish-colored heads with very large mouthparts that are used to help defend the colony from predators.

A. Formosan termite(s)
B. Desert subterranean termite(s)
C. Nevada Drywood termite(s)
D. None of the above

16. Which of the following is a broad-spectrum pyrethroid insecticide. It is available in dusts, emulsifiable concentrates, smokes, ULV concentrates, and wettable-powder formulations?

A. Termidor®
B. Permethrin
C. Chlorfenapyr
D. None of the above

17. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.

A. Boron
B. Fipronil
C. Chlorfenapyr
D. None of the above

18. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.
A. Termidor® C. Boron
B. Permethrin D. None of the above

19. Which of the following is registered as a termiticide under the tradename Phantom®?
A. Termidor® C. Chlorfenapyr
B. Fipronil D. None of the above

Termite Product Applications
20. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.
A. 5 & 20 C. 2 & 5
B. 4 & 10 D. None of the above

Topic 7- Termite and Wood Destroyer Management Section

1. Which of the following is a broad-spectrum pyrethroid insecticide. It is available in dusts, emulsifiable concentrates, smokes, ULV concentrates, and wettable-powder formulations?
A. Termidor® C. Chlorfenapyr
B. Permethrin D. None of the above

2. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

3. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.
A. Termidor® C. Boron
B. Permethrin D. None of the above

4. Which of the following is registered as a termiticide under the tradename Phantom®?
A. Termidor® C. Chlorfenapyr
B. Fipronil D. None of the above

5. Which of the following acts on the mitochondria of cells and uncouples or inhibits oxidative phosphorylation, preventing the formation of the crucial energy molecule adenosine triphosphate (ATP)? As a result, energy production in the cells shuts down, resulting in cellular and, ultimately, termite death?
A. Chlorfenapyr C. Fipronil
B. Permethrin D. None of the above

6. Which of the following works by blocking the gamma-aminobutyric acid (GABA) regulated chloride channel in neurons, thus disrupting the activity of the insect's central nervous system?
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

Termite Product Applications

7. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.

A. 5 & 20 C. 2 & 5
B. 4 & 10 D. None of the above

8. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.

A. 1 to 1 1/2 C. 1 to 2
B. .5 to 1 D. None of the above

Crawl Spaces

9. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.

A. 18 inches C. 6 inches
B. 24 inches D. None of the above

10. Do not treat soil in _____ with a broadcast insecticide spray.

A. Insecticide barrier C. Interior vertical barrier
B. Crawl space area D. None of the above

Hollow Masonry Units of the Foundation Walls

11. Treat through masonry voids to provide a _____ at the top of the footing.

A. Insecticide barrier C. Spray barrier
B. Continuous chemical barrier D. None of the above

12. When treatment is necessary, access holes must be drilled through mortar joints below the_____, as close as possible to the footing.

A. Insecticide barrier C. Interior vertical barrier
B. Sill plate D. None of the above

13. State regulations require pest control operators to remove termite tubes as part of a lifetime protection.

A. TRUE B. FALSE

14. Removing the tubes provides a way to determine if a termite infestation remains _____after treatment or if the termites reappear in the same area later.

A. Active C. Complete termite treatment
B. Dormant D. None of the above

15. Control products containing inorganic borate can be applied to lumber at the time of construction, or later if exposed, to provide lifetime protection from infestation as long as the wood remains dry.

A. TRUE B. FALSE

Topic 8- Wood Borers- Beetles Section

1. This insect is a large caterpillars that grow to almost three inches long. They mine the heart wood of trees. They attack poplars and cottonwoods and can attack many other trees as well.
A. Bark beetle adults C. Shot-hole borer
B. Carpenter worm D. None of the above

2. This insect can extensively mine limbs of susceptible trees. Poplars, willow, and cottonwood trees are hosts of several species.
A. Poplar borer C. Clear-winged moth larva
B. Ants D. None of the above

3. This insect is a pest because it mines in the ends of the new twigs of fruit trees and ornamental fruit trees. The new twigs start to grow and then wilt because these larvae are tunneling down the center of them. Adults are small grey moths.
A. Black moth C. Peach twig borer larva
B. Woody moth D. None of the above

4. The adult insect becomes a large grey moth.
A. Carpenter worm adult C. Poplar moth larva
B. Pine sawyer moth D. None of the above

5. This insect bores in trees as larvae. The adults resemble wasps in many cases.
A. Clear-winged moth C. Locust borer adult
B. Pine sawyer adult D. None of the above

6. This insect's life cycle is spent as the larva in the tree. They feed for a period of from 2-4 years and bore in the heartwood and sapwood. Infested trees can be weakened and break. A related species, causes galls on smaller limbs of poplars and aspens.
A. Carpenter ant C. Poplar borer larva
B. Clear-winged larva D. None of the above

7. This insect attacks black locust trees. The strikingly colored adults emerge in the fall and can be seen feeding on goldenrod.
A. Carpenter bees C. Locust borer adult
B. Pine sawyer larva D. None of the above

8. This insect commonly infests ash. The larvae look like those of the locust borer only smaller. It will attack elm, linden, redbud, and oak as well as ash trees.
A. Bronze birch borer larva C. Poplar and willow borer larva
B. Red headed ash borer adult D. None of the above

9. This insect attacks pine trees and are usually found around homes as a result of being brought in with firewood. They seldom attack pine trees in residential plantings.
A. California laurel borer adult C. Pine sawyer adult
B. Red headed ash borer adult D. None of the above

10. This striking insect, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. Bronze birch borer adult C. Poplar and willow borer larva
B. Red headed ash borer adult D. None of the above

11. Paper birches are frequently attacked by this insect. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the California laurel borer.
A. Bark Beetle C. Pine sawyer adult
B. Bronze birch borer adult D. None of the above

12. The larvae mine the sapwood. Swollen areas on limbs show where the larvae feed and frass can be seen being forced out of holes in the bark as the larva feeds.
A. California laurel borer larva C. Poplar and willow borer larva
B. Red headed ash borer larva D. None of the above

13. Although not true borers, this insect attacks several evergreen trees. The adults usually emerge in mid-summer and lay eggs.
A. Bark beetle adults C. Shot-hole borer
B. Poplar borer D. None of the above

14. This insect attacks weakened or dead trees and shrubs. They feed deeper in the wood than bark beetles. The larvae are legless grubs.
A. Bark beetle adults C. Shot-hole borer
B. Carpenter bee D. None of the above

15. There are many bark beetle genera, of which the most important with respect to forest damage are Dendroctanus, Pitch, and Acolytes.
A. TRUE B. FALSE

16. Adult bark beetles bore through the inner cambial to the outer bark layer, where they channel in galleries in which to lay eggs.
A. TRUE B. FALSE

17. Pine bark beetles in Arizona are generally of the genus Ips or Dendroctonus. However, several other genera also attack pine, including: Hylastes, Hylurgops, and Pityogenes.
A. TRUE B. FALSE

18. Often several species will attack at the same time. Identification of specific beetle species can be difficult. Identification can be aided by knowing the host species attacked, time of year, and the design of the galleries (tunnels) created by the adults and larvae.
A. TRUE B. FALSE

19. Often, numerous small pitch tubes (globules of pitch ³.. to 1 ¹.." diameter) appear on the trunk of infested trees. The pitch tubes generally have a creamy appearance, much like crystallized honey.
A. TRUE B. FALSE

20. A black tint may be present in the pitch. The presence of one or two pitch tubes means that a beetle was successful. Often a few pitch tubes can indicate that the tree unsuccessfully repelled the attacking beetle. Clear sap that runs down the bole (trunk) or limbs is generally from bark beetles.
A. TRUE B. FALSE

Topic 9- Arachnid Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern

1. Not all arachnids are spiders.
A. True B. False

2. _____ includes spiders and scorpions, mites and ticks, horseshoe crabs, daddy-longlegs, and extinct "sea-scorpions", to name a few.
A. The Chelicerata C. The Nematodes
B. The Chaetognatha D. None of the above

Spider Introduction

3. The spider then liquefies the tissues of the prey with a digestive fluid and sucks this broth into its_____, where it may be stored in a digestive gland.
A. Digestive gland C. Stomach
B. Cephalothorax D. None of the above

Spider's Life
Biology

4. The _____is strong and stiff, while the cuticle of the abdomen is soft and extensible.
A. Chelicerae cuticle C. Cephalothorax cuticle
B. Pedipalp cuticle D. None of the above

Spider Reproduction

5. All species of spiders have two separate sexes, and the males are usually larger than the females.
A. True B. False

6. A sexually mature male spider uses its pedipalp cuticle to transfer sperm cells into the female during mating. In this process, the male builds a sperm tower, onto which he deposits a drop of sperm from his abdomen.
A. True B. False

Types of Spider Webs

7. Web patterns vary considerably, depending on the species of spider. Perhaps the most recognizable web is the_____, in which an outer framework supports a continuous spiraling thread and a series of threads radiating from the center of the web.
A. Horizontal silk sheet with a dome C. Almost circular orb web
B. A tight or wide mesh web D. None of the above

Web Building

8. Spiders that weave orb webs generally begin by spinning a thread that is carried by _____ until it catches on a tree limb or other firm support. From this thread, the spider lays down another thread to form _____ that is the basic framework of the web.

A. Silk glands or glands - W-shaped structure
B. Air currents - Y-shaped structure
C. A raised tube in the corner – X -shaped structure
D. None of the above

Constructing an Orb Web

9. After having made the web, the spider will wait on or near the web for its prey to fall victim to its sticky trap.

A. True B. False

Spider Web Uses

10. Some species of spiders do not use their webs for catching prey directly, some spiders pounce from hiding such as trapdoor spiders, or some chase down their prey such as the wolf spider.

A. True B. False

Topic 10- Spider Identification Section

Two Primary Spider Groups

1. _____construct webs in rather quiet, undisturbed places to capture their food. They live in or near their web and wait for food to come to them. They generally have poor eyesight and rely on sensing vibrations in their web to detect prey.

A. Hobo spider(s) C. Pirate spider(s)
B. Web-building spiders D. None of the above

Jumping Spiders

2. Jumping spiders are generally small to medium-sized (about 1/5 - 1/2 inch long) and compact-looking. They are usually _____ with _____, although some can be brightly colored, including some with iridescent mouthparts.

A. Dark-colored – White markings C. White-colored – Black markings
B. Light colored – Dark markings D. None of the above

Ground Spiders

Crab Spider

3. Small crab spiders are dark or tan; some are lightly colored orange, yellow or creamy white. Their legs extend out from their sides causing them to scuttle back and forth in a crab-like fashion. These spiders hide in flower blossoms and may be brought inside in cut flowers.

A. True B. False

Brown Recluse Spider

4. The most definitive physical feature of recluse spiders is their eyes: most spiders have _____ eyes that typically are arranged in two rows of _____, but recluse spiders have _____equal-sized eyes arranged in three pairs.

A. 6 – 8 -- 3 C. 8 – 4 - 6
B. 3 – 6 - 8 D. None of the above

Cyphophthalmi

5. The Cyphophthalmi are a suborder of harvestmen, with about _____ genera, and more than _____ described species.

A. 100 - 36 C. 50 - 1000
B. 36 - 100 D. None of the above

Mygalomorphae

6. The Mygalomorphae, (also called the Orthognatha), are an infraorder of spiders. The latter name comes from the orientation of the fangs which point straight down and do not cross each other (as opposed to _____).

A. Australasian funnel-web spiders C. Theraphosa blondi
B. Araneomorph D. None of the above

7. Almost all species of Mygalomorphae have _____ eyes, however there are some with fewer (Masteria lewisi has only _____ eyes).

A. 6 – 8 C. 8 - 6
B. 3 - 8 D. None of the above

8. Unlike Araneomorphae, which die after about a year, Mygalomorphae can live for up to _____years, and some don't reach maturity until they are about _____years old. Some flies in the family Acroceridae which are endoparasites of mygalomorphs may remain dormant in the book lungs for as long as _____ years before beginning their development and consuming the spider.

A. 30 – 6 - 25 C. 25 – 6 - 20
B. 10 – 3 - 20 D. None of the above

Solifugae (Sun Spiders or Wind Scorpions)

9. Most Solifugae species live in deserts and feed opportunistically on ground-dwelling arthropods and other animals.

A. True B. False

Vinegarroons

10. The Vinegarroons' acetic acid gives this spray a vinegar-like smell, giving rise to the common name vinegarroon.

A. True B. False

Topic 11- Web Spider Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Orb Weaving Spiders

1. Venom toxicity - the bite of Orb-Weaving Spider is of high risk (toxic) to humans.

A. True B. False

Trap-Door Spiders

2. Venom toxicity - the bite of the Trap-Door Spider is of low risk (non-toxic) to humans. It is a non-aggressive spider - usually timid but may stand up and present its fangs if harassed. Rarely bites - but if so it can be painful.

A. True B. False

House Spider

3. The spider's web forms a tube, and the narrowed end serves as a retreat where the spider can hide. When an insect walks over the _____, the spider immediately rushes out from the funnel, grabs its victim, and delivers a poisonous bite. The spider then carries its prey back to its retreat, where it begins to feed.

A. Sheet web C. Oval web
B. Trap web D. None of the above

Garden Spiders

4. Garden spiders belong to the family Araneidae, a group of _____ different species of spiders that weave orb, or circular, webs.

A. 36 C. 2,500
B. 5,000 D. None of the above

Hobo Spider Information

5. The hobo spider is a member of the funnel-web spider family _____.

A. Solifugae C. Agelenidae
B. Araneomorphae D. None of the above

Spider Bite Section

6. All spiders (except the family _____) have venom glands, but not all are venomous to man. In fact very few species pose a threat to man. Some spider bites might need medical attention even if the species is recognized as not being venomous to man, as secondary infections can occur.

A. Uloboridae C. Agelenidae
B. Araneomorphae D. None of the above

7. Spider venom, like bee venom, is non-fatal.

A. True B. False

8. A patient may also have symptoms from a spider bite such as a red, itchy rash over the torso, arms and legs that is usually seen in the first 24-72 hours. Patients may have pain in the muscles and joints, fever, chills, swollen lymph nodes, headaches, and nausea and vomiting.

A. True B. False

9. Cytotoxic venom affects the cellular tissue**,** usually restricted to the area of the bite, but it can spread. The bite is at first painless, with symptoms developing about 2 to 8 hours after the bite. It starts by resembling a mosquito sting, becoming more painful and swollen. Eventually it ulcerates into a large surface lesion (up to 10 centimeters) that will require medical attention. This type of bite would result from members of the genera _____(family Sicariidae) and _____ (family Miturgidae).

A. Loxosceles - Cheiracanthium C. Mygalomorphae - Loxosceles
B. Loxosceles - Araneomorphae D. None of the above

Jumping Spiders

10. The _____is probably the most common biting spider in the United States. People are caught by surprise and scared when they see the spider jump, especially if it jumps towards them.

A. Brown recluse spider(s) C. Jumping spider(s)
B. Trap-Door Spider(s) D. None of the above

Topic 12- Tick Section

Multiple choice. Please select one answer only per question. No trick questions.

(S) means the answer may be plural or singular in nature. Or means either answer may work.

1. More than 800 species of ticks inhabit the planet. They are second only to mosquitoes as vectors of human disease,_____.

A. Including parasitic mechanisms
B. Causing allergic reaction(s)
C. Both infectious and toxic
D. None of the above

2. Ixodidae or Hard Ticks >700 species are distinguished from the Argasidae by the presence of a _____or hard shield.

A. Idiosoma
B. Capitulum (head)
C. Scutum
D. None of the above

Life cycle and reproduction

3. _____ticks undergo three primary stages of development: larval, nymphal, and adult.

A. Only Argasidae or Argasid
B. Only Dermacentor
C. Both ixodid and argasid
D. None of the above

Ixodidae

4. Ixodid ticks require three hosts, and their life cycle takes at least one year to complete. Up to 3,000 eggs are laid on the ground by an adult female tick.

A. 100
B. 3,000
C. 500
D. None of the above

5. All ticks have an incomplete metamorphosis: after hatching from the egg a series of similar stages (instars) develop from a_____, to eight legged nymph and then a sexually developed eight legged adult.

A. Six legged larva
B. Seven instar
C. Eight legged larva
D. None of the above

6. Between each stage there is a molt (ecdysis) which enables the developing tick to expand within a new_____.

A. Idiosoma
B. Haller's organ
C. External skeleton
D. None of the above

7. The family _____ contains the important genera Amblyomma, Dermacentor, Haemaphysalis, Hyalomma, Ixodes, Margaropus, and Rhipicephalus. Also the important boophilid ticks, formerly of the genus Boophilus, are now classified as a sub-genus within the genus Rhipicephalus.

A. Ornithodoros
B. Ixodidae
C. Dermacentor
D. None of the above

8. The cement serves to hold the _____ in place while the tick feeds.

A. Idiosoma
B. Capitulum
C. Mouthparts
D. None of the above

9. _____on larval and nymphal ticks are small with less penetration and produce a smaller host reaction.
A. Idiosoma C. Mouthparts
B. Hypostome D. None of the above

10. Adult Ixodes and _____ticks have long mouthparts that can reach the sub dermal layer of skin, produce a larger reaction, and make the tick harder to remove.
A. Argasidae or Argasid C. Dermacentor
B. Amblyomma D. None of the above

Please complete the entire assignment before submitting the answer key

Topic 13 -Tick Identification Section

Deer Tick Life Cycle
1. The deer tick passes through four life stages (egg, larva, nymph, adult), over a _____
A. Two year period C. Two month period
B. Three month period D. None of the above

Egg to Larvae
2. Eggs are fertilized in the fall and deposited in leaf litter the following_____.
A. Spring C. Summer
B. Month D. None of the above

3. The larvae then drop off their host into the leaf litter where they molt into the next stage, the nymph, remaining dormant until the following _____.
A. Summer C. Month
B. Spring D. None of the above

Nymph to Adult
4. Over the next few months the nymph molts into the larger adult tick, which emerges in fall, with a peak in October through November. _____find and feed on a host, then the females lay eggs sometime after feeding.
A. Both male and female adults C. Larvae
B. Seven instars D. None of the above

Larvae to Nymph
5. During the spring and early summer of the next year the nymphs end their dormancy and begin to seek a host. _____ are commonly found on the forest floor in leaf litter and on low lying vegetation.
A. Nymph(s) C. Females
B. Seven instars D. None of the above

Adult Ticks
6. In the fall of the second year, nymphs molt into adult ticks. Female adults are _____and larger than males.
A. Red or orange C. Black
B. Black and red D. None of the above

7. As female ticks feed over the course of several days, their bodies slowly enlarge with blood (engorge). Adult females infected with disease agents as _____may transmit disease during this feeding.
A. Both male and female adults C. Several nymphal stages
B. Larvae or nymphs D. None of the above

8. _____ticks attach, but do not feed or become engorged. Because the adult males do not take a blood meal, they do not transmit Lyme disease, human anaplasmosis, or babesiosis.
A. Nymph(s) C. Male
B. The adult female D. None of the above

Lone Star Tick Amblyomma americanum
9. Each female produces _____ eggs, which are deposited under leaf and soil litter in middle to late spring.
A. 300-800 C. 3,000-8,000
B. 30,000-80,000 D. None of the above

Winter Tick Dermacentor albipictus
10. _____is found throughout North America. It is widely distributed throughout California, but populations are concentrated around the central coastal and sierra foothill areas. It primarily feeds on horses and deer from fall through early spring. Heavy infestations of horses may cause emaciation and anemia (Furman and Loomis 1984).
A. This two host tick C. This one host tick
B. This no host tick D. None of the above

Topic 14 - Cockroach Section

Introduction
1. There are approximately 400 roach species are known worldwide; most cockroaches inhabit the warm tropical regions of the globe.
A. True B. False

2. Cockroaches leave feces as well as emitting airborne pheromones for nesting. These chemical trails transmit bacteria on surfaces.
A. True B. False

3. Roaches can survive without food for up to a year.
A. True B. False

Collective Decision-Making
4. Sociable cockroaches often display _____when choosing food sources.
A. Collective decision-making C. Two pieces of information
B. Pheromones D. None of the Above

Cockroach Life Cycle
5. All roaches have three stages in their life cycle -- egg, nymph (young) and adult. Some have live birth and others lay eggs.
A. True B. False

Reproduction

6. Cockroaches use pheromones to attract mates, and the males practice courtship rituals, such as posturing and _____.

A. Stridulation C. Form of breathing
B. Three stages D. None of the Above

7. Female cockroaches are sometimes seen carrying egg cases on the end of their abdomens; the German cockroach holds about 300 to 400 long, thin eggs in a case called an ootheca.

A. True B. False

Lungs and Breathing

8. Cockroaches, like all insects, breathe through a system of tubes called?

A. Tracheae C. Lungs
B. Ootheca D. None of the Above

9. While cockroaches do not have _____ and thus do not actively breathe in the vertebrate lung manner, in some very large species the body musculature may contract rhythmically to forcibly move air out and in the spiracles; this may be considered a form of breathing.

A. Tracheae C. Lungs
B. Ootheca D. None of the Above

Summary of Most Commonly Found Types of Cockroaches

10. Which roach require warmth, moisture, and food, which is why they are most common in kitchens and bathrooms?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

11. Which roach is shiny black or dark brown, and the adult is about 1-inch long?

A. Oriental Cockroach C. Brownbanded Cockroach
B. German Cockroach D. None of the Above

12. Although the usual habitat for which cockroaches is outdoors, they often appear in homes, especially in wooded settings.

A. Oriental Cockroach C. Wood Cockroaches
B. German Cockroach D. None of the Above

13. Which roach is the largest cockroach commonly found within dwellings, measuring about 1 1/2 inches long when fully grown?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

14. Which roach species is far less common than the German cockroach, but occasionally can be a problem in homes?

A. Brownbanded Cockroach C. Oriental Cockroach
B. American Cockroach D. None of the Above

15. Which roach is by far the most common cockroach infesting homes and buildings?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

Topic 15 – Common Cockroach Classifications Section

1. Giant cockroaches or blaberids (family Blaberidae) are the largest cockroach family. Commonly these live intside and people keep these pests as pets. 13 species in 20 genera in North America.
A. True B. False

2. The Blattellidae is a family of the order Blattaria (cockroaches). This family contains many of the smaller common household cockroaches, among others.
A. True B. False

3. The Blattidae is a family of the order Blattaria (cockroaches). It contains several of the least common household cockroaches.
A. True B. False

Scientific Classification
4. Cockroaches make up the order Blattodea, which contains five families.
A. True B. False

5. Which cockroach is similar to the German cockroach in appearance, but it occurs primarily outdoors where it feeds on decaying plant materials. Compared to the German cockroach, it is more active during daylight hours and will be found around lights. They also are known to fly when disturbed.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

6. Which cockroach 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. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

7. Which cockroach is common outdoors, and lives in warm damp shady areas near the ground or any area containing natural debris. It will often seek refuge indoors when a drop in temperature occurs, but is still quite tolerable of cooler weather?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

8. Which missing cockroach and Blatella germanica, the Asian cockroach, Blatella asahinai, and the brownbanded cockroach, Supella longipalpa, are in the family Blatellidae?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

9. Which males are 18-20 mm (¾") long and have a delicate brown-on-tan pattern on the pronotum. The wings are a mottled tan and longer than the abdomen?
A. Brownbanded Cockroach C. Desert Cockroach
B. American Cockroach D. None of the Above

10. Which females are 12-14 mm (½") long and have a broadly oval, somewhat hump-backed appearance?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

11. Which of the following are a live bearing species that grow to three inches or more?
A. Brownbanded Cockroach C. Death Head Roaches
B. Desert Cockroach D. None of the Above

12. The Field cockroach is very similar in appearance to which cockroach?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

13. Which cockroach is about 5/8 inch long, overall light brown in color with wings that cover the abdomen? The thoracic shield just behind the head (pronotum) is marked with two prominent black stripes.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Outside Living
14. Which cockroach is found outdoors, applications of insecticides to foundation plantings, wood piles, mulch, and other infested locations are recommended?
A. Oriental cockroach C. Smokybrown cockroach
B. Brownbanded cockroach D. None of the Above

Chemical Control
15. Perimeter insecticide sprays may aid in the reduction of cockroaches entering homes from the exterior.
A. True B. False

Topic 16 – Cockroach Inspection and Treatment Section

Sanitation Elimination of Food Resources
1. Which roach can remain alive for approximately 2 weeks with no food or water and for 42 days if only water is available?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Elimination of Moisture Resources
2. The single most important factor in determining cockroach survival is availability of?
A. Dark crevices C. Food
B. Water D. None of the Above

3. German cockroaches live less than two weeks when there is no supply of _____even if food is abundant.
A. Dark crevices C. Food
B. Free water D. None of the Above

Dark Locations – Similar to Rodents

4. In addition to food and water, cockroaches need _____in which to rest and breed, and these harborages must be identified during the inspection. Once again, use your knowledge of the target pest to focus your efforts.

A. Dark crevices C. Daytime hiding places
B. Water D. None of the Above

5. German cockroaches prefer dark crevices close to?

A. Dark crevices C. Food
B. Moisture D. None of the Above

6. Cockroaches prefer bare wooden surfaces, cardboard or paper because these surfaces are easier to climb and because porous surfaces retain their?

A. Aggregation pheromone C. Food
B. Water D. None of the Above

IPM Methods for Cockroaches (Types of Pest Control)

7. IPM programs use current, comprehensive information on the life cycles of pests and their

A. Pest management evaluations C. Judicious use of pesticides
B. Interaction with the environment D. None of the Above

8. IPM takes advantage of all appropriate _____ including, but not limited to, the judicious use of pesticides.

A. Entry and establishment C. Pest management options
B. Target of many insecticides D. None of the Above

9. IPM is not a _____but, rather, a series of pest management evaluations, decisions and controls. In practicing IPM, growers who are aware of the potential for pest infestation follow a four-tiered approach.

A. Pest management evaluations C. Single pest control method
B. Interaction with the environment D. None of the Above

Summary

Prevention

10. Entry and establishment of roach colonies can be prevented by _____of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.

A. Close inspection C. Pest management options
B. Target of many insecticides D. None of the Above

Sanitation

11. Good housekeeping is the _____in preventing and controlling cockroach populations. Cockroaches cannot live without food, water and shelter. Do not allow food particles to remain on shelves or floors.

A. Pest management evaluations C. Judicious use of pesticides
B. Most important factor D. None of the Above

Keys for Cockroach Control and/or Elimination
Chemical Control

12. Cockroaches have been the target of many insecticides over the years but they have _____to several of them.

A. Entry and establishment
B. Target of many insecticides
C. Developed resistance
D. None of the Above

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

A. True B. False

Residual Sprays - Introduction

14. Residual sprays are generally easy and fast to apply.

A. True B. False

15. These formulations are oil-based or water-based emulsions and water-based suspensions (wettable powders).

A. True B. False

Topic 17 - Pesticide Applicator Section

1. Rinsate from the containers, when added directly into the_____, efficiently and economically uses all pesticide in the container. This eliminates the need to store and later dispose of the rinsate.

A. Sprayer tank
B. Ground water
C. Potential source of pesticide exposure
D. None of the above

2. Unless rinsed from the container immediately, _____ will solidify and become difficult to remove.

A. Contamination
B. Rinsing
C. Some pesticides
D. None of the above

3. _____containers removes a potential source of pesticide exposure to people, animals, and wildlife.

A. Rinsate
B. Rinsing
C. Potential source of pesticide exposure
D. None of the above

4. _____ is required by federal and state regulations and is a good, sound agricultural and environmental practice.

A. Rinsing
B. Pesticide containers
C. Proper rinsing
D. None of the above

Rinsing Helps Protect the Environment

5. _____reduces a potential source of contamination of soil, surface, and ground water.

A. Potential source of pesticide exposure
B. Pesticide container recycling
C. Proper rinsing of pesticide containers
D. None of the above

6. When contamination occurs, plants and animals may be harmed and water supplies affected. Prevention of environmental contamination is always better than cleanup. _____also helps in reducing the problem of handling pesticide wastes.
A. Contamination C. Rinsing
B. Pesticide containers D. None of the above

7. No matter how an empty pesticide container is disposed of**,** it must be properly_____ .
A. Rinsate C Rinsed and triple punched
B. Disposed in the trash D. None of the above

8. Both federal and state laws require rinsing. Landfill operators and recyclers can only accept_____ .
A. Contamination C. Pesticide containers
B. Properly rinsed containers D. None of the above

9. Pesticide containers should only be offered to recycling projects designed for pesticide containers and not general plastic and metal recycling programs.
A. TRUE B. FALSE

Federal Pesticide Recordkeeping Requirements
10. The EPA currently requires certified commercial applicators to keep records under regulations implementing the Federal Insecticide, Fungicide, and Rodenticide Act (**FIFRA**). The EPA is prohibited from requiring certified private applicators to maintain _____. However, some individual States require certified private applicators to maintain records.
A. Record(s) C. Restricted use pesticide
B. EPA registration number D. None of the above

The recordkeeping requirements are:
11. The brand or product name, and the _____ of the restricted use pesticide that was applied;
A. Location of the application C. Spot application(s)
B. EPA registration number D. None of the above

12. The total amount of the _____ applied;
A. Location of the application C. Spot application(s)
B. Restricted use pesticide D. None of the above

13. The location of the application, the_____ , and the crop, commodity, stored product, or site to which a restricted use pesticide was applied;
A. Size of area treated C. Restricted use pesticide
B. EPA registration number D. None of the above

14. The name and certification number (if applicable) of the certified applicator who applied or who supervised the application of the _____.
A. Record(s) C. Restricted use pesticide
B. Chemial D. None of the above

15. The _____were amended to require a more detailed description of the location of a "spot application."
A. Location of the application C. Regulations
B. EPA registration number D. None of the above

16. _____ must be recorded with the following information: Brand or product name and EPA registration number; total amount applied; location must be designated as "spot application," followed by a concise description of the location.
A. Location of the application C. Spot application(s)
B. Record(s) D. None of the above

17. When working with _____is long sleeves, long pants, shoes and socks, rubber gloves, and splash-proof eye protection, regardless of the toxicity level of the pesticide.
A. Chronic exposure C. Highly toxic pesticides
B. Pesticides D. None of the above

18. Rubber boots and a respirator are necessary when working with moderately or highly toxic pesticides. The _____ include wearing a double layer of clothing. This can be accomplished by wearing coveralls over the long pants and longsleeve shirt, and rubber boots over the shoes and socks.
A. EPA's recommendation(s) C. EPA'S requirements
B. OSHA's recommendations D. None of the above

Goggles and Face Shields
19. It is necessary to wear splash-proof goggles when working with pesticides. Not only can the pesticide be absorbed through the eyes but the _____ can cause permanent eye injuries also.
A. EPA's recommendation(s) C. Mixing or applying pesticides
B. Acidity of a pesticide D. None of the above

20. Use goggles meeting or exceeding _____ estimate. When pouring or mixing concentrates it is preferable to use a full-face shield to protect the face from splashes. Always wash the goggles or face shield with soap and water after use.
A. ANSI standard Z87.1, 1968 C. EPA's recommendation(s)
B. Guidance D. None of the above

California DPR Requirement

The Assignment must be submitted to TLC by December 27 in order to be submitted to DPR by the 30th. If it is late, you will be penalized $50 per day.

Advanced Pest Control Assignment #2 Last Names H-M

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 80%. 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.

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.

Topic 1- Pesticide Section

1. Fertilizers, nutrients, and other material used to promote plant survival and health are not considered plant growth regulators and thus are_____.
A. Biochemical pesticide(s) C. Biological control agent(s)
B. Not pesticides D. None of the above

2. _____, excluding certain microorganisms, are exempted from regulation by the EPA. (Biological control agents include beneficial predators such as birds or ladybugs that eat insect pests.)
A. Biochemical pesticide(s) C. Insect growth regulator (IGR)
B. Biological control agent(s) D. None of the above

3. The term ''spray technician'' means any individual who provides structural pest control or lawn pest control.
A. TRUE B. FALSE

4. The term ''service technician'' does not include people who use_____ , sanitizers or disinfectants; or who otherwise apply ready to use consumer products pesticides.
A. Lawn pest control C. Biochemical pesticide(s)
B. Antimicrobial pesticides D. None of the above

5. _____ are used as disinfectants in medical settings, where they are present in products used in cleaning cabinets, floors, walls, toilets, and other surfaces.
A. Chitin synthesis inhibitor(s) C. Antimicrobial public health pesticides
B. Microbial pesticide(s) D. None of the above

6. Proper utilization of these _____is an important part of infection control activities employed by hospitals and other medical establishments.
A. Disinfectants C. Biochemical pesticide(s)
B. Microbial pesticide(s) D. None of the above

7. _____ are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals.
A. Insect growth regulator (IGR)
C. Biopesticides
B. Microbial pesticide(s)
D. None of the above

8. _____ consist of a microorganism as the active ingredient. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pest[s].
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. Microbial pesticide(s)
D. None of the above

9. _____ are pesticidal substances that plants produce from genetic material that has been added to the plant.
A. Insect growth regulator (IGR)
C. Plant-Incorporated-Protectants (PIPs)
B. Microbial pesticide(s)
D. None of the above

10. _____ are naturally occurring substances that control pests by non-toxic mechanisms. Conventional pesticides, by contrast, are generally synthetic materials that directly kill or inactivate the pest.
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. Plant-Incorporated-Protectants (PIPs)
D. None of the above

11. _____ include substances, such as insect sex pheromones that interfere with mating as well as various scented plant extracts that attract insect pests to traps.
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. Insect growth regulator (IGR)
D. None of the above

12. _____ is a synthetic chemical that mimics insect hormones. Hormones regulate a wide array of body and growth (physiological) functions.
A. Insect growth regulator (IGR)
C. Antimicrobial pesticides
B. Microbial pesticide(s)
D. None of the above

13. _____ may hinder molting, pupal emergence, or body wall formation.
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. IGR
D. None of the above

14. _____are often specific for an insect species or a group of very closely related species. They often have delayed effects because they are taken into the insect and stored until the insect reaches the right growth stage. This may range from days to weeks or even months.
A. IGR
C. Antimicrobial pesticides
B. Microbial pesticide(s)
D. None of the above

15. _____ work by preventing the formation of chitin, a carbohydrate needed to form the insect's exoskeleton. With these inhibitors, an insect grows normally until it molts.
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. Insect growth regulator (IGR)
D. None of the above

16. The _____ prevent the new exoskeleton from forming properly, causing the insect to die. Death may be quick, or take up to several days depending on the insect.
A. Inhibitor(s) C. Biochemical pesticide(s)
B. Insect growth regulator (IGR) D. None of the above

17. _____ can also kill eggs by disrupting normal embryonic development.
A. Biochemical pesticide(s) C. Biochemical pesticide(s)
B. Chitin synthesis inhibitor(s) D. None of the above

18. _____ is not approved for use in indoor residences.
A. Nylar C. Hexaflumuron
B. Pyriproxyfen D. None of the above

19. _____ is an insecticide of the benzamide class. It is used in forest management and on field crops to selectively control insect pests.
A. Methoprene C. Diflubenzuron
B. Nylar D. None of the above

20. _____ is used primarily on cattle, citrus, cotton, mushrooms, ornamentals, standing water, forestry trees and in programs to control mosquito larvae and gypsy moth populations. Formulations include a soluble concentrate, flowable concentrate, wettable powder and a pelleted/tableted.
A. Diflubenzuron C. Nylar
B. Pyriproxyfen D. None of the above

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Topic 2 - EPA Requirement Training Section

Agricultural Employers Responsibility

1. _____must be trained on pesticide safety before they begin working at your grow operation.
A. Handler(s) C. All workers and handlers
B. Agricultural Employer(s) D. None of the Above

Which Pesticides Uses are Covered?

2. Most pesticide uses involved in the production of agricultural plants on a farm, forest, nursery, or greenhouse are covered by the WPS. This includes pesticides used on plants, and pesticides used on the soil or planting medium the plants are (or will be) grown in. Both general-use and restricted-use pesticides are covered by the_____ .
A. Labeling C. WPS
B. Training D. None of the Above

Decontamination Supplies and Requirements

3. 2 part question- Workers, handlers and early-entry workers must have adequate water for routine washing, soap and sufficient paper towels. Where there is no running water, early-entry workers and handlers must have at least _____ gallons of water for one employee and _____ gallons of water for two or more employees. The water must be of a "quality and temperature" that will not cause illness or injury.

A. 1- 10 C. 10-20
B. 5-25 D. None of the Above

4. Handlers must have a clean change of clothes -- such as _____ -- to put on in case their clothes become contaminated.

A. Coveralls C. Normal Clothes
B. Bloomers D. None of the Above

5. Handlers and early-entry workers must also carry _____ of water with them (or it must be "immediately" nearby on their vehicle) for emergency eyeflushing when the pesticide label requires protective eyewear (goggles or faceshield).

A. A pint C. 2 pints
B. A gallon D. None of the Above

6. All permanent mixing/loading sites regardless of whether or not the label requires_____.

A. Protective eyewear C. Permanent decontamination station(s)
B. Emergency eyewash D. None of the Above

WPS Requires Providing Decontamination Sites

7. A decontamination site must be within a _____ mile of the employees' work site.

A. 1/10 C. 1/2
B. 1/4 D. None of the Above

8. Decontamination supplies, however, need **not** be provided to _____ workers.

A. Contact early-entry C. No-contact early-entry
B. Short-term early-entry D. None of the Above

Decontamination Supply Requirements

9. Employers must make sure to provide handlers with decontamination supplies for _____and pesticide residues while they are performing handling tasks and to workers who are in a pesticide-treated area and are performing tasks that involve contact with anything that has been treated with pesticides, including soil, water, or plant surfaces.

A. Washing off pesticides C. Mix, load, or apply agricultural pesticide(s)
B. Work D. None of the Above

Worker Decontamination Supplies

10. Supplies must be located within ¼ mile of the work area if a WPS-labeled pesticide has been used within _____ days, except in those cases where low-risk pesticides (those with REIs of four hours or less) are used.

A. 72 C. 30
B. 4 D. None of the Above

Handler Decontamination Supplies

11. Supplies must be provided at the mixing site and within ¼ mile of the application area. Supplies may be in the application area if protected from drift and spray residues. Supplies must include the following: Water—a minimum of _____gallons per handler or a potable source of tap water

A. 5 C. 3
B. 10 D. None of the Above

12. _____ if the pesticides used require protective eyewear as stated on the label; potable water may be used as eyewash

A. Decontamination site C. All permanent mixing/loading sites
B. Emergency eyewash D. None of the Above

Emergency Information

13. Provide to the worker or handler or to treating medical personnel, promptly upon emergency vehicle, request, any obtainable information on: product name, EPA registration number, and active ingredients for any product(s) to which the person may have been exposed, antidote, first aid, _____and other medical or emergency information from the product labeling, description of the way the pesticide was being used, circumstances of the worker's or handler's exposure to the pesticide.

A. Emergency assistance C. Requirements in the standard
B. Statement of practical treatment D. None of the Above

14. If there is reason to believe that a worker has been poisoned or injured by pesticides, the employer must make prompt transportation to a medical facility available to the worker. On request the employer must provide, to either the worker or medical personnel providing treatment, information about the product including the EPA registration number, active ingredients in any product the worker might have been exposed to in the past _____ days, antidote and other first aid information from the product labeling, and information about the application and the exposure of workers to the pesticide.

A. 30 C. 7
B. 45 D. None of the Above

Restrictions During Application

15. The handler employer must assure that: No pesticide is applied so as to contact any worker (directly or through _____) other than an appropriately trained and equipped handler.

A. Drift C. Dusts
B. Droplets D. None of the Above

Oral Warnings to Workers

16. Oral warnings must include the the time during which entry is restricted.

A. True B. False

17. Oral warnings must include the instructions not to enter the treated area until the restricted-entry interval has expired.

A. True B. False

Communication:

18. Provide oral warnings to workers in a manner that they can understand.

A. True B. False

19. Workers who are on your establishment at the start of an application must be orally warned **before the application takes place**.
A. True B. False

20. Workers who are **not** on your establishment at the start of an application must be orally warned **at the beginning of their first work period** if (1) the application is still taking place or (2) the restricted-entry interval for the pesticide is in effect.
A. True B. False

Topic 3- Bees and Related Bee-Like Insects

Mason Bee
1. Smaller than a honeybee, mason bees resemble _____more than Honeybees.
A. Bumble bees C. Flies
B. Mosquitoes D. None of the above

2. Mason bees are native to _____.
A. North America C. Europe
B. South America D. None of the above

Identifying characteristics for the family Halictidae include:
3. In many species, the tongue is long and pointed, adapted for probing into flowers. All bees are covered with hair, to which pollen sticks when flowers are visited; most female bees have apparatus for gathering this pollen; it is combed into a special basket or brush located on the hind legs.
A. True B. False

Orchid Bee Not to be confused with Orchard Bee
4. Male orchid bees have uniquely modified legs which are used to collect and store different volatile compounds throughout their lives, primarily from orchids in the sub-tribes Stanhopeinae and Catasetinae, where all species are exclusively pollinated by_____.
A. Ergonime males C. Females
B. Euglossine males D. None of the above

5. The male Eufriesea purpurata is highly unusual in actively collecting the _____in huge amounts from houses in Brazil, without suffering any harm from it.
A. Insecticide DDT C. Toxic dust
B. Pollen D. None of the above

Cuckoo Bee
6. Look for cuckoo bees flying low over the ground and foliage, hunting for foraging and nesting potential victims.
A. True B. False

7. Many cuckoo bees are closely related to their hosts, and may bear similarities in appearance reflecting this relationship. This common pattern gave rise to the ecological principle known as "_____".
A. Price's law C. Johnson standard
B. Emery's Rule D. None of the above

Queen Bumble Bee

8. The queen bumble bee comes out of hibernation every _____to find a new spot to build her nest and start a new colony.

A. Spring C. Summer
B. Full moon D. None of the above

9. The queen bee is fertilized the previous season and has managed to live through the winter months. The same nesting spots from previous seasons are rarely used.

A. True B. False

10. A suitable place for nesting is usually on the ground, beneath a flat object. An old mouse hole or similar hole in the ground is preferred if it is underneath an old tarp, flat stone or man-made objects such as a deck. The hole chosen by the queen bee is first padded by pieces of vegetation such as dry grass or moss.

A. True B. False

Topic 4- Mosquito Section

Integrated Pest Management -Introduction

1. IPM relies heavily on resident education and _____.

A. Pests and vectors C. Pest monitoring
B. Pest prevention D. None of the above

2. Once mosquitoes have landed, they rely on _____to determine if we are an acceptable blood meal host.

A. Transient waters C. A number of short-range attractants
B. Torpor D. None of the above

3. Mosquitoes that hibernate in the adult stage live for 6-8 months, but spend most of that time in a_____.

A. Its life cycle C. State of torpor
B. Cocoon D. None of the above

4. Aedes adults will oviposit near the edge of the swamp or within tussocks of vegetation, requiring later flooding to _____.

A. Begin its life cycle C. Inundate the eggs for hatching
B. Look for a blood meal D. None of the above

Mosquito Life Cycle Section

5. The type of standing water in which the mosquito chooses to lay her _____depends upon the species.

A. Nest C. Eggs
B. Raft D. None of the above

6. Sections of marshes, swamps, clogged ditches, and temporary pools and puddles are all prolific mosquito breeding sites. Other locations in which some species lay their _____ include tree holes and containers such as old tires, buckets, toys, potted plant trays, and saucers and plastic covers or tarpaulins.

A. Nest C. Eggs
B. Raft D. None of the above

Wrigglers and Tumblers

7. The larva lives in the water, feeds, and develops into the third stage of the life cycle called a pupa or "_____".

A. Ergatoids C. Wrigglers
B. Tumbler D. None of the above

8. Mosquitoes may overwinter as eggs or,_____.

A. Fertilized adult females or larvae C. Wriggler
B. Ergatoids D. None of the above

9. Mosquitoes belonging to the genus Culex lay their _____ in bunches or "rafts."

A. Tumblers C. Eggs
B. Cocoons D. None of the above

Weather

10. Mosquito development and population dynamics are closely tied to pollution.

A. TRUE B. FALSE

Water Source

11. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.

A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

12. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.

A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

13. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.

A. Out-of-doors at night C. Northern half
B. Southern parts D. None of the above

14. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.

A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

15. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.

A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

16. Malaria was a serious plague in the United States for centuries until its final eradication in the 1990s.

A. TRUE B. FALSE

17. Despite the eradication, there are no cases of autochthonous (local) transmission in the U.S. vectored by An. quadrimaculatus in the east and Anopheles freeborni in the west.
A. TRUE B. FALSE

18. Culex pipiens can be found in a fairly limited range of larval habitats, but are generally associated with water that has a low organic content.
A. TRUE B. FALSE

19. Culex pipiens' main host is wild donkeys, but it also feeds freely on a wide variety of warm-blooded vertebrates, including birds.
A. TRUE B. FALSE

20. Culex pipiens is a serious pest, called the "house mosquito" because it commonly develops in small containers around the home. It shows great skill in finding ways to get into the house, where it feeds on_____.
A. Birds C. Effluent from sewage treatment plants
B. The occupants at night D. None of the above

Topic 5- Mosquito Identification Section

1. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.
A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

2. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.
A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

3. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.
A. Out-of-doors at night C. Northern half
B. Southern parts D. None of the above

4. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.
A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

5. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

6. Malaria was a serious plague in the United States for centuries until its final eradication in the 1950s. Despite the ostensible eradication, there are occasional cases of autochthonous (local) transmission in the U.S. vectored by An. quadrimaculatus in the east and Anopheles freeborni in the west.
A. True B. False

7. Culex pipiens can be found in a fairly limited range of larval habitats, but are generally associated with water that has a low organic content.
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8. Culex pipiens' main host is wild donkeys, but it also feeds freely on a wide variety of warm-blooded vertebrates, including birds.
A. True B. False

9. Culex pipiens is a serious pest, called the "house mosquito" because it commonly develops in small containers around the home. It shows great skill in finding ways to get into the house, where it feeds on_____.
A. Birds C. Effluent from sewage treatment plants
B. The occupants at night D. None of the above

10. Culex tarsalis breeds in nearly every freshwater source except _____. Larvae are found in all but the most polluted ground pools.
A. Treeholes C. Effluent from sewage treatment plants
B. Ground water D. None of the above

11. Culex tarsalis is the most important carrier of _____ in much of the western U.S.
A. WEE C. Western equine and Saint Louis encephalitis
B. Malaria D. None of the above

12. As mosquitoes go, the Western Encephalitis Mosquito is one of the more easily recognizable, with its _____.
A. Distinctive scale patterns C. High pitched scream
B. Distinct ring around the proboscis D. None of the above

13. Species in the genus Culex are known as “snowpool” mosquitoes.
A. True B. False

14. Woodland Malaria mosquitoes have four life stages: egg, larva, pupa, and adult. The immature stages need standing water to complete their life cycle.
A. True B. False

Effective Mosquito-Control Program
15. Initial surveys identify the species of mosquitoes present and provide general information on locations, densities and disease potential. With this knowledge it may be possible to determine life cycles and feeding preferences; predict larval habitats, adult resting places and flight ranges; and perhaps even make preliminary recommendations for control programs.
A. True B. False

Topic 6- Wood Destroyers- Termite Section

Feeding Habits
1. Termites feed primarily upon wood and wood products containing _____.
A. Moisture C. Fungi
B. Cellulose(s) D. None of the above

2. Termites have distinct protozoa in their intestine that provide enzymes to digest _____.
A. Moisture C. Wood
B. Cellulose(s) D. None of the above

Below Ground Termite Colonies
3. The colony may be up to _____ deep in the ground. The ground serves as a protection against extreme temperatures and provides a moisture reservoir.
A. 18-20 inches C. 18-20 feet
B. 8-12 feet D. None of the above

Termite Identification Section
4. Which of the following termites are responsible for guarding the colony and its occupants? Termites continually groom each other to obtain certain secretions. These secretions help regulate the number of individuals in the various castes.
A. Soldier(s) C. Alates
B. Worker(s) D. None of the above

5. Which of the following do not need a connection to soil and there is no soil in their feeding galleries? They do not build mud tunnels; they construct large, irregular galleries that run across and with the wood grain, with a very smooth, clean, and sandpaper-like appearance.
A. Formosan termite(s) C. Western subterranean termite(s) or Subterranean
B. Drywood termite(s) D. None of the above

6. Which of the following have three primary castes: nymphs, reproductives and soldiers. The reproductive, also known as alates, are often up to ¾-inches long and have dark-brown wings and dark-brown bodies? Nymphs are cream colored and soldiers have brownish-colored heads with very large mouthparts that are used to help defend the colony from predators.
A. Formosan termite(s) C. Nevada Drywood termite(s)
B. Desert subterranean termite(s) D. None of the above

7. Which of the following is a broad-spectrum pyrethroid insecticide. It is available in dusts, emulsifiable concentrates, smokes, ULV concentrates, and wettable-powder formulations?
A. Termidor® C. Chlorfenapyr
B. Permethrin D. None of the above

8. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

9. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.
A. Termidor® C. Boron
B. Permethrin D. None of the above

10. Which of the following is registered as a termiticide under the tradename Phantom®?
A. Termidor® C. Chlorfenapyr
B. Fipronil D. None of the above

11. Which of the following acts on the mitochondria of cells and uncouples or inhibits oxidative phosphorylation, preventing the formation of the crucial energy molecule adenosine triphosphate (ATP)? As a result, energy production in the cells shuts down, resulting in cellular and, ultimately, termite death?
A. Chlorfenapyr C. Fipronil
B. Permethrin D. None of the above

12. Which of the following works by blocking the gamma-aminobutyric acid (GABA) regulated chloride channel in neurons, thus disrupting the activity of the insect's central nervous system?
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

Termite Product Applications
13. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.
A. 5 & 20 C. 2 & 5
B. 4 & 10 D. None of the above

14. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.
A. 1 to 1 1/2 C. 1 to 2
B. .5 to 1 D. None of the above

Crawl Spaces
15. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.
A. 18 inches C. 6 inches
B. 24 inches D. None of the above

16. Do not treat soil in _____ with a broadcast insecticide spray.
A. Insecticide barrier C. Interior vertical barrier
B. Crawl space area D. None of the above

Hollow Masonry Units of the Foundation Walls
17. Treat through masonry voids to provide a _____ at the top of the footing.
A. Insecticide barrier C. Spray barrier
B. Continuous chemical barrier D. None of the above

18. When treatment is necessary, access holes must be drilled through mortar joints below the_____, as close as possible to the footing.
A. Insecticide barrier C. Interior vertical barrier
B. Sill plate D. None of the above

19. State regulations require pest control operators to remove termite tubes as part of a lifetime protection.
A. TRUE B. FALSE

20. Removing the tubes provides a way to determine if a termite infestation remains _____after treatment or if the termites reappear in the same area later.
A. Active C. Complete termite treatment
B. Dormant D. None of the above

Topic 7- Termite and Wood Destroyer Management Section

1. Which of the following is a broad-spectrum pyrethroid insecticide. It is available in dusts, emulsifiable concentrates, smokes, ULV concentrates, and wettable-powder formulations?
A. Termidor® C. Chlorfenapyr
B. Permethrin D. None of the above

2. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

3. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.
A. Termidor® C. Boron
B. Permethrin D. None of the above

4. Which of the following is registered as a termiticide under the tradename Phantom®?
A. Termidor® C. Chlorfenapyr
B. Fipronil D. None of the above

5. Which of the following acts on the mitochondria of cells and uncouples or inhibits oxidative phosphorylation, preventing the formation of the crucial energy molecule adenosine triphosphate (ATP)? As a result, energy production in the cells shuts down, resulting in cellular and, ultimately, termite death?
A. Chlorfenapyr C. Fipronil
B. Permethrin D. None of the above

6. Which of the following works by blocking the gamma-aminobutyric acid (GABA) regulated chloride channel in neurons, thus disrupting the activity of the insect's central nervous system?
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

Termite Product Applications
7. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.
A. 5 & 20 C. 2 & 5
B. 4 & 10 D. None of the above

8. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.
A. 1 to 1 1/2 C. 1 to 2
B. .5 to 1 D. None of the above

Crawl Spaces
9. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.
A. 18 inches C. 6 inches
B. 24 inches D. None of the above

10. Do not treat soil in _____ with a broadcast insecticide spray.
A. Insecticide barrier C. Interior vertical barrier
B. Crawl space area D. None of the above

Hollow Masonry Units of the Foundation Walls
11. Treat through masonry voids to provide a _____ at the top of the footing.
A. Insecticide barrier C. Spray barrier
B. Continuous chemical barrier D. None of the above

12. When treatment is necessary, access holes must be drilled through mortar joints below the_____, as close as possible to the footing.
A. Insecticide barrier C. Interior vertical barrier
B. Sill plate D. None of the above

13. State regulations require pest control operators to remove termite tubes as part of a lifetime protection.
A. TRUE B. FALSE

14. Removing the tubes provides a way to determine if a termite infestation remains _____after treatment or if the termites reappear in the same area later.
A. Active C. Complete termite treatment
B. Dormant D. None of the above

15. Control products containing inorganic borate can be applied to lumber at the time of construction, or later if exposed, to provide lifetime protection from infestation as long as the wood remains dry.
A. TRUE B. FALSE

Topic 8- Wood Borers- Beetles Section

1. This insect can extensively mine limbs of susceptible trees. Poplars, willow, and cottonwood trees are hosts of several species.
A. Poplar borer C. Clear-winged moth larva
B. Ants D. None of the above

2. This insect is a pest because it mines in the ends of the new twigs of fruit trees and ornamental fruit trees. The new twigs start to grow and then wilt because these larvae are tunneling down the center of them. Adults are small grey moths.
A. Black moth
B. Woody moth
C. Peach twig borer larva
D. None of the above

3. This insect is a large caterpillars that grow to almost three inches long. They mine the heart wood of trees. They attack poplars and cottonwoods and can attack many other trees as well.
A. Bark beetle adults
B. Carpenter worm
C. Shot-hole borer
D. None of the above

4. The adult insect becomes a large grey moth.
A. Carpenter worm adult
B. Pine sawyer moth
C. Poplar moth larva
D. None of the above

5. This insect bores in trees as larvae. The adults resemble wasps in many cases.
A. Clear-winged moth
B. Pine sawyer adult
C. Locust borer adult
D. None of the above

6. This insect's life cycle is spent as the larva in the tree. They feed for a period of from 2-4 years and bore in the heartwood and sapwood. Infested trees can be weakened and break. A related species, causes galls on smaller limbs of poplars and aspens.
A. Carpenter ant
B. Clear-winged larva
C. Poplar borer larva
D. None of the above

7. This insect attacks black locust trees. The strikingly colored adults emerge in the fall and can be seen feeding on goldenrod.
A. Carpenter bees
B. Pine sawyer larva
C. Locust borer adult
D. None of the above

8. This insect commonly infests ash. The larvae look like those of the locust borer only smaller. It will attack elm, linden, redbud, and oak as well as ash trees.
A. Bronze birch borer larva
B. Red headed ash borer adult
C. Poplar and willow borer larva
D. None of the above

9. This insect attacks pine trees and are usually found around homes as a result of being brought in with firewood. They seldom attack pine trees in residential plantings.
A. California laurel borer adult
B. Red headed ash borer adult
C. Pine sawyer adult
D. None of the above

10. This striking insect, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. Bronze birch borer adult
B. Red headed ash borer adult
C. Poplar and willow borer larva
D. None of the above

11. Paper birches are frequently attacked by this insect. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the California laurel borer.
A. Bark Beetle
B. Bronze birch borer adult
C. Pine sawyer adult
D. None of the above

12. The larvae mine the sapwood. Swollen areas on limbs show where the larvae feed and frass can be seen being forced out of holes in the bark as the larva feeds.
A. California laurel borer larva C. Poplar and willow borer larva
B. Red headed ash borer larva D. None of the above

13. Although not true borers, this insect attacks several evergreen trees. The adults usually emerge in mid-summer and lay eggs.
A. Bark beetle adults C. Shot-hole borer
B. Poplar borer D. None of the above

14. This insect attacks weakened or dead trees and shrubs. They feed deeper in the wood than bark beetles. The larvae are legless grubs.
A. Bark beetle adults C. Shot-hole borer
B. Carpenter bee D. None of the above

15. There are many bark beetle genera, of which the most important with respect to forest damage are Dendroctanus, Pitch, and Acolytes.
A. TRUE B. FALSE

16. Adult bark beetles bore through the inner cambial to the outer bark layer, where they channel in galleries in which to lay eggs.
A. TRUE B. FALSE

17. Pine bark beetles in Arizona are generally of the genus Ips or Dendroctonus. However, several other genera also attack pine, including: Hylastes, Hylurgops, and Pityogenes.
A. TRUE B. FALSE

18. Dust caused by boring in the bark crevices and at the tree base is another sign of Bark Beetles.
A. TRUE B. FALSE

19. Often, numerous small pitch tubes (globules of pitch ³.. to 1 ¹.." diameter) appear on the trunk of infested trees. The pitch tubes generally have a creamy appearance, much like crystallized honey.
A. TRUE B. FALSE

20. A black tint may be present in the pitch. The presence of one or two pitch tubes means that a beetle was successful. Often a few pitch tubes can indicate that the tree unsuccessfully repelled the attacking beetle. Clear sap that runs down the bole (trunk) or limbs is generally from bark beetles.
A. TRUE B. FALSE

Topic 9- Arachnid Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern

Spider Reproduction

1. All species of spiders have two separate sexes, and the males are usually larger than the females.

A. True B. False

2. _____ includes spiders and scorpions, mites and ticks, horseshoe crabs, daddy-longlegs, and extinct "sea-scorpions", to name a few.

A. The Chelicerata C. The Nematodes
B. The Chaetognatha D. None of the above

Spider Introduction

3. The spider then liquefies the tissues of the prey with a digestive fluid and sucks this broth into its_____, where it may be stored in a digestive gland.

A. Digestive gland C. Stomach
B. Cephalothorax D. None of the above

Spider's Life
Biology

4. The _____is strong and stiff, while the cuticle of the abdomen is soft and extensible.

A. Chelicerae cuticle C. Cephalothorax cuticle
B. Pedipalp cuticle D. None of the above

Spider Reproduction

5. All species of spiders have two separate sexes, and the males are usually larger than the females.

A. True B. False

6. A sexually mature male spider uses its pedipalp cuticle to transfer sperm cells into the female during mating. In this process, the male builds a sperm tower, onto which he deposits a drop of sperm from his abdomen.

A. True B. False

Types of Spider Webs

7. Web patterns vary considerably, depending on the species of spider. Perhaps the most recognizable web is the_____, in which an outer framework supports a continuous spiraling thread and a series of threads radiating from the center of the web.

A. Horizontal silk sheet with a dome C. Almost circular orb web
B. A tight or wide mesh web D. None of the above

Web Building

8. Spiders that weave orb webs generally begin by spinning a thread that is carried by _____ until it catches on a tree limb or other firm support. From this thread, the spider lays down another thread to form _____ that is the basic framework of the web.

A. Silk glands or glands - W-shaped structure
B. Air currents - Y-shaped structure
C. A raised tube in the corner – X -shaped structure
D. None of the above

Constructing an Orb Web

9. After having made the web, the spider will wait on or near the web for its prey to fall victim to its sticky trap.

A. True B. False

Spider Web Uses

10. Some species of spiders do not use their webs for catching prey directly, some spiders pounce from hiding such as trapdoor spiders, or some chase down their prey such as the wolf spider.

A. True B. False

Web Building

8. Spiders that weave orb webs generally begin by spinning a thread that is carried by _____ until it catches on a tree limb or other firm support. From this thread, the spider lays down another thread to form _____ that is the basic framework of the web.

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Constructing an Orb Web

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Spider Web Uses

10. Some species of spiders do not use their webs for catching prey directly, some spiders pounce from hiding such as trapdoor spiders, or some chase down their prey such as the wolf spider.

A. True B. False

Topic 10- Spider Identification Section

Two Primary Spider Groups

1. _____construct webs in rather quiet, undisturbed places to capture their food. They live in or near their web and wait for food to come to them. They generally have poor eyesight and rely on sensing vibrations in their web to detect prey.

A. Hobo spider(s) C. Pirate spider(s)
B. Web-building spiders D. None of the above

Jumping Spiders

2. Jumping spiders are generally small to medium-sized (about 1/5 - 1/2 inch long) and compact-looking. They are usually _____ with _____, although some can be brightly colored, including some with iridescent mouthparts.

A. Dark-colored – White markings
B. Light colored – Dark markings
C. White-colored – Black markings
D. None of the above

Ground Spiders

Crab Spider

3. Small crab spiders are dark or tan; some are lightly colored orange, yellow or creamy white. Their legs extend out from their sides causing them to scuttle back and forth in a crab-like fashion. These spiders hide in flower blossoms and may be brought inside in cut flowers.

A. True B. False

Brown Recluse Spider

4. The most definitive physical feature of recluse spiders is their eyes: most spiders have _____ eyes that typically are arranged in two rows of _____, but recluse spiders have _____equal-sized eyes arranged in three pairs.

A. 6 – 8 -- 3
B. 3 – 6 - 8
C. 8 – 4 - 6
D. None of the above

Cyphophthalmi

5. The Cyphophthalmi are a suborder of harvestmen, with about _____ genera, and more than _____ described species.

A. 100 - 36
B. 36 - 100
C. 50 - 1000
D. None of the above

Mygalomorphae

6. The Mygalomorphae, also called the Orthognatha, are an infraorder of spiders. The latter name comes from the orientation of the fangs which point straight down and do not cross each other as opposed to _____).

A. Australasian funnel-web spiders
B. Araneomorph
C. Theraphosa blondi
D. None of the above

7. Almost all species of Mygalomorphae have _____ eyes, however there are some with fewer (Masteria lewisi has only _____ eyes).

A. 6 – 8
B. 3 - 8
C. 8 - 6
D. None of the above

8. Unlike Araneomorphae, which die after about a year, Mygalomorphae can live for up to _____years, and some don't reach maturity until they are about _____years old. Some flies in the family Acroceridae which are endoparasites of mygalomorphs may remain dormant in the book lungs for as long as _____ years before beginning their development and consuming the spider.

A. 30 – 6 - 25
B. 10 – 3 - 20
C. 25 – 6 - 20
D. None of the above

Solifugae (Sun Spiders or Wind Scorpions)

9. Most Solifugae species live in deserts and feed opportunistically on ground-dwelling arthropods and other animals.

A. True B. False

Vinegarroons
10. The Vinegarroons' acetic acid gives this spray a vinegar-like smell, giving rise to the common name vinegarroon.
A. True B. False

Topic 11- Web Spider Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Orb Weaving Spiders
1. Venom toxicity - the bite of Orb-Weaving Spider is of high risk (toxic) to humans.
A. True B. False

Trap-Door Spiders
2. Venom toxicity - the bite of the Trap-Door Spider is of low risk (non-toxic) to humans. It is a non-aggressive spider - usually timid but may stand up and present its fangs if harassed. Rarely bites - but if so it can be painful.
A. True B. False

House Spider
3. The spider's web forms a tube, and the narrowed end serves as a retreat where the spider can hide. When an insect walks over the _____, the spider immediately rushes out from the funnel, grabs its victim, and delivers a poisonous bite. The spider then carries its prey back to its retreat, where it begins to feed.
A. Sheet web C. Oval web
B. Trap web D. None of the above

Garden Spiders
4. Garden spiders belong to the family Araneidae, a group of _____ different species of spiders that weave orb, or circular, webs.
A. 36 C. 2,500
B. 5,000 D. None of the above

Hobo Spider Information
5. The hobo spider is a member of the funnel-web spider family _____.
A. Solifugae C. Agelenidae
B. Araneomorphae D. None of the above

Spider Bite Section
6. All spiders (except the family _____) have venom glands, but not all are venomous to man. In fact very few species pose a threat to man. Some spider bites might need medical attention even if the species is recognized as not being venomous to man, as secondary infections can occur.
A. Uloboridae C. Agelenidae
B. Araneomorphae D. None of the above

7. Spider venom, like bee venom, is non-fatal.
A. True B. False

8. A patient may also have symptoms from a spider bite such as a red, itchy rash over the torso, arms and legs that is usually seen in the first 24-72 hours. Patients may have pain in the muscles and joints, fever, chills, swollen lymph nodes, headaches, and nausea and vomiting.
A. True B. False

9. Cytotoxic venom affects the cellular tissue**,** usually restricted to the area of the bite, but it can spread. The bite is at first painless, with symptoms developing about 2 to 8 hours after the bite. It starts by resembling a mosquito sting, becoming more painful and swollen. Eventually it ulcerates into a large surface lesion (up to 10 centimeters) that will require medical attention. This type of bite would result from members of the genera _____(family Sicariidae) and _____ (family Miturgidae).
A. Loxosceles - Cheiracanthium C. Mygalomorphae - Loxosceles
B. Loxosceles - Araneomorphae D. None of the above

Jumping Spiders
10. The _____is probably the most common biting spider in the United States. People are caught by surprise and scared when they see the spider jump, especially if it jumps towards them.
A. Brown recluse spider(s) C. Jumping spider(s)
B. Trap-Door Spider(s) D. None of the above

Topic 12- Tick Section

(S) means the answer may be plural or singular in nature. Or means either answer may work. Multiple choice. Please select one answer only per question. No trick questions.

1. More than 800 species of ticks inhabit the planet. They are second only to mosquitoes as vectors of human disease,_____.
A. Including parasitic mechanisms C. Both infectious and toxic
B. Causing allergic reaction(s) D. None of the above

2. Ixodidae or Hard Ticks >700 species are distinguished from the Argasidae by the presence of a _____or hard shield.
A. Idiosoma C. Scutum
B. Capitulum (head) D. None of the above

Life cycle and reproduction
3. _____ticks undergo three primary stages of development: larval, nymphal, and adult.
A. Only Argasidae or Argasid C. Both ixodid and argasid
B. Only Dermacentor D. None of the above

Ixodidae

4. Ixodid ticks require three hosts, and their life cycle takes at least one year to complete. Up to 3,000 eggs are laid on the ground by an adult female tick.

A. 100 C. 500
B. 3,000 D. None of the above

5. All ticks have an incomplete metamorphosis: after hatching from the egg a series of similar stages (instars) develop from a_____, to eight legged nymph and then a sexually developed eight legged adult.

A. Six legged larva C. Eight legged larva
B. Seven instar D. None of the above

6. Between each stage there is a molt (ecdysis) which enables the developing tick to expand within a new_____.

A. Idiosoma C. External skeleton
B. Haller's organ D. None of the above

7. The family _____ contains the important genera Amblyomma, Dermacentor, Haemaphysalis, Hyalomma, Ixodes, Margaropus, and Rhipicephalus. Also the important boophilid ticks, formerly of the genus Boophilus, are now classified as a sub-genus within the genus Rhipicephalus.

A. Ornithodoros C. Dermacentor
B. Ixodidae D. None of the above

8. The cement serves to hold the _____ in place while the tick feeds.

A. Idiosoma C. Mouthparts
B. Capitulum D. None of the above

9. _____on larval and nymphal ticks are small with less penetration and produce a smaller host reaction.

A. Idiosoma C. Mouthparts
B. Hypostome D. None of the above

10. Adult Ixodes and _____ticks have long mouthparts that can reach the sub dermal layer of skin, produce a larger reaction, and make the tick harder to remove.

A. Argasidae or Argasid C. Dermacentor
B. Amblyomma D. None of the above

Please complete the entire assignment before submitting the answer key

Topic 13 -Tick Identification Section

Deer Tick Life Cycle

1. The deer tick passes through four life stages (egg, larva, nymph, adult), over a _____

A. Two month period C. Two year period
B. Three month period D. None of the above

Egg to Larvae

2. Eggs are fertilized in the fall and deposited in leaf litter the following_____.

A. Summer C. Spring
B. Month D. None of the above

3. The larvae then drop off their host into the leaf litter where they molt into the next stage, the nymph, remaining dormant until the following _____.
A. Summer C. Spring
B. Month D. None of the above

Larvae to Nymph
4. During the spring and early summer of the next year the nymphs end their dormancy and begin to seek a host. _____ are commonly found on the forest floor in leaf litter and on low lying vegetation.
A. Nymph(s) C. Females
B. Seven instars D. None of the above

Nymph to Adult
5. Over the next few months the nymph molts into the larger adult tick, which emerges in fall, with a peak in October through November. _____find and feed on a host, then the females lay eggs sometime after feeding.
A. Both male and female adults C. Larvae
B. Seven instars D. None of the above

Adult Ticks
6. In the fall of the second year, nymphs molt into adult ticks. Female adults are _____and larger than males.
A. Red or orange C. Black
B. Black and red D. None of the above

7. As female ticks feed over the course of several days, their bodies slowly enlarge with blood (engorge). Adult females infected with disease agents as _____may transmit disease during this feeding.
A. Both male and female adults C. Several nymphal stages
B. Larvae or nymphs D. None of the above

8. _____ticks attach, but do not feed or become engorged. Because the adult males do not take a blood meal, they do not transmit Lyme disease, human anaplasmosis, or babesiosis.
A. Nymph(s) C. The adult female
B. Male D. None of the above

Lone Star Tick Amblyomma americanum
9. Each female produces _____ eggs, which are deposited under leaf and soil litter in middle to late spring.
A. 300-800 C. 3,000-8,000
B. 30,000-80,000 D. None of the above

Winter Tick Dermacentor albipictus
10. _____is found throughout North America. It is widely distributed throughout California, but populations are concentrated around the central coastal and sierra foothill areas. It primarily feeds on horses and deer from fall through early spring. Heavy infestations of horses may cause emaciation and anemia (Furman and Loomis 1984).
A. This two host tick C. This one host tick
B. This no host tick D. None of the above

Topic 14 - Cockroach Section

Introduction

1. There are approximately 4,000 roach species are known worldwide; most cockroaches inhabit the warm tropical regions of the globe.
A. True B. False

2. Cockroaches leave feces as well as emitting airborne pheromones for nesting. These chemical trails transmit bacteria on surfaces.
A. True B. False

3. Roaches can survive without food for up to a month.
A. True B. False

Collective Decision-Making

4. Sociable cockroaches often display _____when choosing food sources.
A. Collective decision-making C. Two pieces of information
B. Pheromones D. None of the Above

Cockroach Life Cycle

5. All roaches have three stages in their life cycle -- egg, nymph (young) and adult. Some have live birth and others lay eggs.
A. True B. False

Reproduction

6. Cockroaches use pheromones to attract mates, and the males practice courtship rituals, such as posturing and _____.
A. Stridulation C. Form of breathing
B. Three stages D. None of the Above

7. Female cockroaches are sometimes seen carrying egg cases on the end of their abdomens; the German cockroach holds about 300 to 400 long, thin eggs in a case called an ootheca.
A. True B. False

Lungs and Breathing

8. Cockroaches, like all insects, breathe through a system of tubes called?
A. Tracheae C. Lungs
B. Ootheca D. None of the Above

9. While cockroaches do not have _____ and thus do not actively breathe in the vertebrate lung manner, in some very large species the body musculature may contract rhythmically to forcibly move air out and in the spiracles; this may be considered a form of breathing.
A. Tracheae C. Lungs
B. Ootheca D. None of the Above

Summary of Most Commonly Found Types of Cockroaches

10. Which roach require warmth, moisture, and food, which is why they are most common in kitchens and bathrooms?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

11. Which roach is shiny black or dark brown, and the adult is about 1-inch long?

A. Oriental Cockroach C. Brownbanded Cockroach
B. German Cockroach D. None of the Above

12. Although the usual habitat for which cockroaches is outdoors, they often appear in homes, especially in wooded settings.

A. Oriental Cockroach C. Wood Cockroaches
B. German Cockroach D. None of the Above

13. Which roach is the largest cockroach commonly found within dwellings, measuring about 1 1/2 inches long when fully grown?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

14. Which roach species is far less common than the German cockroach, but occasionally can be a problem in homes?

A. Brownbanded Cockroach C. Oriental Cockroach
B. American Cockroach D. None of the Above

15. Which roach is by far the most common cockroach infesting homes and buildings?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

Topic 15 – Common Cockroach Classifications Section

1. Giant cockroaches or blaberids (family Blaberidae) are the largest cockroach family. Commonly these live intside and people keep these pests as pets. 13 species in 20 genera in North America.

A. True B. False

2. The Blattellidae is a family of the order Blattaria (cockroaches). This family contains many of the smaller common household cockroaches, among others.

A. True B. False

3. The Blattidae is a family of the order Blattaria (cockroaches). It contains several of the least common household cockroaches.

A. True B. False

Scientific Classification

4. Cockroaches make up the order Blattodea, which contains five families.

A. True B. False

5. Which other cockroach along with Blatella germanica, the Asian cockroach, Blatella asahinai, and the brownbanded cockroach, Supella longipalpa, are in the family Blatellidae?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

6. Which males are 18-20 mm (¾") long and have a delicate brown-on-tan pattern on the pronotum. The wings are a mottled tan and longer than the abdomen?
A. Brownbanded Cockroach C. Desert Cockroach
B. American Cockroach D. None of the Above

7. Which females are 12-14 mm (½") long and have a broadly oval, somewhat hump-backed appearance?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

8. Which of the following are a live bearing species that grow to three inches or more?
A. Brownbanded Cockroach C. Death Head Roaches
B. Desert Cockroach D. None of the Above

9. The Field cockroach is very similar in appearance to which cockroach?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

10. Which cockroach is about 5/8 inch long, overall light brown in color with wings that cover the abdomen? The thoracic shield just behind the head (pronotum) is marked with two prominent black stripes.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

11. Which cockroach is similar to the German cockroach in appearance, but it occurs primarily outdoors where it feeds on decaying plant materials. Compared to the German cockroach, it is more active during daylight hours and will be found around lights. They also are known to fly when disturbed.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

12. Which cockroach 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. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

13. Which cockroach is common outdoors, and lives in warm damp shady areas near the ground or any area containing natural debris. It will often seek refuge indoors when a drop in temperature occurs, but is still quite tolerable of cooler weather?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Outside Living

14. Which cockroach is found outdoors, applications of insecticides to foundation plantings, wood piles, mulch, and other infested locations are recommended?

A. Oriental cockroach C. Smokybrown cockroach
B. Brownbanded cockroach D. None of the Above

Chemical Control

15. Perimeter insecticide sprays may aid in the reduction of cockroaches entering homes from the exterior.

A. True B. False

Topic 16 – Cockroach Inspection and Treatment Section

Sanitation Elimination of Food Resources

1. Which roach can remain alive for approximately 2 weeks with no food or water and for 42 days if only water is available?

A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Elimination of Moisture Resources

2. The single most important factor in determining cockroach survival is availability of?

A. Dark crevices C. Food
B. Water D. None of the Above

3. German cockroaches live less than two weeks when there is no supply of _____even if food is abundant.

A. Dark crevices C. Food
B. Free water D. None of the Above

Dark Locations – Similar to Rodents

4. In addition to food and water, cockroaches need _____in which to rest and breed, and these harborages must be identified during the inspection. Once again, use your knowledge of the target pest to focus your efforts.

A. Dark crevices C. Daytime hiding places
B. Water D. None of the Above

5. German cockroaches prefer dark crevices close to?

A. Dark crevices C. Food
B. Moisture D. None of the Above

6. Cockroaches prefer bare wooden surfaces, cardboard or paper because these surfaces are easier to climb and because porous surfaces retain their?

A. Aggregation pheromone C. Food
B. Water D. None of the Above

IPM Methods for Cockroaches (Types of Pest Control)

7. IPM programs use current, comprehensive information on the life cycles of pests and their

A. Pest management evaluations C. Judicious use of pesticides
B. Interaction with the environment D. None of the Above

8. IPM takes advantage of all appropriate _____ including, but not limited to, the judicious use of pesticides.
A. Entry and establishment C. Pest management options
B. Target of many insecticides D. None of the Above

9. IPM is not a _____but, rather, a series of pest management evaluations, decisions and controls. In practicing IPM, growers who are aware of the potential for pest infestation follow a four-tiered approach.
A. Pest management evaluations C. Single pest control method
B. Interaction with the environment D. None of the Above

Summary
Prevention
10. Entry and establishment of roach colonies can be prevented by _____of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.
A. Close inspection C. Pest management options
B. Target of many insecticides D. None of the Above

Sanitation
11. Good housekeeping is the _____in preventing and controlling cockroach populations. Cockroaches cannot live without food, water and shelter. Do not allow food particles to remain on shelves or floors.
A. Pest management evaluations C. Judicious use of pesticides
B. Most important factor D. None of the Above

Keys for Cockroach Control and/or Elimination
Chemical Control
12. Cockroaches have been the target of many insecticides over the years but they have _____to several of them.
A. Entry and establishment C. Developed resistance
B. Target of many insecticides D. None of the Above

13. Attempts to use pheromones as sex lures or to sterilize male cockroaches have thus far not proved practical on a large scale.
A. True B. False

Residual Sprays - Introduction
14. Residual sprays are generally easy and fast to apply.
A. True B. False

15. These formulations are oil-based or water-based emulsions and water-based suspensions (wettable powders).
A. True B. False

Topic 17 - Pesticide Applicator Section

1. Rinsate from the containers, when added directly into the_____, efficiently and economically uses all pesticide in the container. This eliminates the need to store and later dispose of the rinsate.
A. Sprayer tank C. Potential source of pesticide exposure
B. Ground water D. None of the above

2. Unless rinsed from the container immediately, _____ will solidify and become difficult to remove.
A. Contamination C. Some pesticides
B. Rinsing D. None of the above

3. _____containers removes a potential source of pesticide exposure to people, animals, and wildlife.
A. Rinsate C. Potential source of pesticide exposure
B. Rinsing D. None of the above

4. _____ is required by federal and state regulations and is a good, sound agricultural and environmental practice.
A. Rinsing C. Proper rinsing
B. Pesticide containers D. None of the above

Rinsing Helps Protect the Environment
5. _____reduces a potential source of contamination of soil, surface, and ground water.
A. Potential source of pesticide exposure C. Proper rinsing of pesticide containers
C. Pesticide container recycling D. None of the above

6. When contamination occurs, plants and animals may be harmed and water supplies affected. Prevention of environmental contamination is always better than cleanup. _____also helps in reducing the problem of handling pesticide wastes.
A. Contamination C. Rinsing
B. Pesticide containers D. None of the above

7. No matter how an empty pesticide container is disposed of**,** it must be properly_____ .
A. Rinsate C Rinsed and triple punched
B. Disposed in the trash D. None of the above

8. Both federal and state laws require rinsing. Landfill operators and recyclers can only accept_____ .
A. Contamination C. Pesticide containers
B. Properly rinsed containers D. None of the above

Federal Pesticide Recordkeeping Requirements
The recordkeeping requirements are:
9. The location of the application, the_____ , and the crop, commodity, stored product, or site to which a restricted use pesticide was applied;
A. Size of area treated C. Restricted use pesticide
B. EPA registration number D. None of the above

10. The name and certification number (if applicable) of the certified applicator who applied or who supervised the application of the _____.
A. Record(s) C. Restricted use pesticide
B. Treatment D. None of the above

11. The _____were amended to require a more detailed description of the location of a "spot application."
A. Location of the application C. Regulations
B. EPA registration number D. None of the above

12. _____ must be recorded with the following information: Brand or product name and EPA registration number; total amount applied; location must be designated as "spot application," followed by a concise description of the location.
A. Location of the application C. Spot application(s)
B. Record(s) D. None of the above

13. When working with _____is long sleeves, long pants, shoes and socks, rubber gloves, and splash-proof eye protection, regardless of the toxicity level of the pesticide.
A. Chronic exposure C. Highly toxic pesticides
B. Pesticides D. None of the above

14. Rubber boots and a respirator are necessary when working with moderately or highly toxic pesticides. The _____ include wearing a double layer of clothing. This can be accomplished by wearing coveralls over the long pants and longsleeve shirt, and rubber boots over the shoes and socks.
A. EPA's recommendation(s) C. EPA'S requirements
B. OSHA's recommendations D. None of the above

15. The use of gloves is _____ when working with highly toxic pesticides. It is recommended that only unlined rubber or neoprene (nitrile, etc.) gloves be used when handling or using all pesticides. Unlined gloves should be thoroughly washed (inside and outside) after each use.
A. Mandatory C. EPA'S requirements
B. OSHA's recommendations D. None of the above

16. Gloves should be at least _____ inches long to provide adequate protection for wrists and the cuffs should be inside sleeves for most work. This will keep runoff pesticide from getting into the gloves. However when working overhead put the cuffs of gloves outside sleeves.
A. 6 C. 12
B. 8 D. None of the above

Goggles and Face Shields
17. It is necessary to wear splash-proof goggles when working with pesticides. Not only can the pesticide be absorbed through the eyes but the _____ can cause permanent eye injuries also.
A. EPA's recommendation(s) C. Mixing or applying pesticides
B. Acidity of a pesticide D. None of the above

18. Use goggles meeting or exceeding _____ estimate. When pouring or mixing concentrates it is preferable to use a full-face shield to protect the face from splashes. Always wash the goggles or face shield with soap and water after use.

A. ANSI standard Z87.1, 1968
C. EPA's recommendation(s)
B. Guidance
D. None of the above

19. Unlined rubber or neoprene (nitrile, etc.) boots should be worn over work shoes or in place of work shoes when mixing or applying pesticides. Pull the legs of trousers over the tops of boots to help prevent _____ from getting inside boots. Wash boots with soap and water after each use.

A. Spilled pesticide
C. Mixing or applying pesticides
B. Runoff pesticide
D. None of the above

20. Cloth or leather boots will absorb pesticides and allow the pesticide to contact the skin of the leg or foot and will be a source of residues causing _____.

A. Chronic exposure
C. Acute exposure
B. Guidance
D. None of the above

California DPR Requirement

The Assignment must be submitted to TLC by December 27 in order to be submitted to DPR by the 30th. If it is late, you will be penalized $50 per day.

Advanced Pest Control Assignment #3 N-S Last Names

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 80%. 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.

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.

Topic 1- Pesticide Section

1. Fertilizers, nutrients, and other material used to promote plant survival and health are not considered plant growth regulators and thus are_____.
A. Biochemical pesticide(s) C. Biological control agent(s)
B. Not pesticides D. None of the above

2. _____, excluding certain microorganisms, are exempted from regulation by the EPA. (Biological control agents include beneficial predators such as birds or ladybugs that eat insect pests.)
A. Biochemical pesticide(s) C. Insect growth regulator (IGR)
B. Biological control agent(s) D. None of the above

3. _____, such as pheromones and microbial pesticides are becoming increasingly popular and often are safer than traditional chemical pesticides.
A. Biologically-based pesticides C. Infection control activities
B. IGRs D. None of the above

4. _____used to control diseases of humans or animals (such as livestock and pets) are not considered pesticides and are regulated by the Food and Drug Administration.
A. Drugs C. Biochemical pesticide(s)
B. Biological control agent(s) D. None of the above

5. The term ''service technician'' does not include people who use_____ , sanitizers or disinfectants; or who otherwise apply ready to use consumer products pesticides.
A. Structural pest control or lawn pest control C. Biochemical pesticide(s)
B. Antimicrobial pesticides D. None of the above

6. _____ are used as disinfectants in medical settings, where they are present in products used in cleaning cabinets, floors, walls, toilets, and other surfaces.
A. Chitin synthesis inhibitor(s) C. Antimicrobial public health pesticides
B. Microbial pesticide(s) D. None of the above

7. Proper utilization of these _____is an important part of infection control activities employed by hospitals and other medical establishments.
A. Disinfectants
C. Biochemical pesticide(s)
B. Microbial pesticide(s)
D. None of the above

8. _____ are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals.
A. Insect growth regulator (IGR)
C. Biopesticides
B. Microbial pesticide(s)
D. None of the above

9. _____ consist of a microorganism as the active ingredient. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pest[s].
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. Microbial pesticide(s)
D. None of the above

10. _____ are pesticidal substances that plants produce from genetic material that has been added to the plant.
A. Insect growth regulator (IGR)
C. Plant-Incorporated-Protectants (PIPs)
B. Microbial pesticide(s)
D. None of the above

11. _____ are naturally occurring substances that control pests by non-toxic mechanisms. Conventional pesticides, by contrast, are generally synthetic materials that directly kill or inactivate the pest.
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. Plant-Incorporated-Protectants (PIPs)
D. None of the above

12. _____ include substances, such as insect sex pheromones that interfere with mating as well as various scented plant extracts that attract insect pests to traps.
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. Insect growth regulator (IGR)
D. None of the above

13. _____ may hinder molting, pupal emergence, or body wall formation.
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. IGR
D. None of the above

14. _____are often specific for an insect species or a group of very closely related species. They often have delayed effects because they are taken into the insect and stored until the insect reaches the right growth stage. This may range from days to weeks or even months.
A. IGR
C. Antimicrobial pesticides
B. Microbial pesticide(s)
D. None of the above

15. _____ work by preventing the formation of chitin, a carbohydrate needed to form the insect's exoskeleton. With these inhibitors, an insect grows normally until it molts.
A. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
B. Insect growth regulator (IGR)
D. None of the above

16. The _____ prevent the new exoskeleton from forming properly, causing the insect to die. Death may be quick, or take up to several days depending on the insect.
A. Inhibitor(s) C. Biochemical pesticide(s)
B. Insect growth regulator (IGR) D. None of the above

17. _____ can also kill eggs by disrupting normal embryonic development.
A. Biochemical pesticide(s) C. Biochemical pesticide(s)
B. Chitin synthesis inhibitor(s) D. None of the above

18. _____ affect insects for longer periods of time than hormonal IGRs. These are also quicker acting but can affect predaceous insects, arthropods and even fish.
A. Insect growth regulator (IGR) C. Chitin synthesis inhibitor(s)
B. Microbial pesticide(s) D. None of the above

19. _____ is an insect growth regulator that interferes with insects' chitin synthesis.
A. Methoprene C. Diflubenzuron
B. Hexaflumuron D. None of the above

20. _____ is not approved for use in indoor residences.
A. Nylar C. Hexaflumuron
B. Pyriproxyfen D. None of the above

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Topic 2 - EPA Requirement Training Section

Agricultural Employers Responsibility

1. _____must be trained on pesticide safety before they begin working at your grow operation.
A. Handler(s) C. All workers and handlers
B. Agricultural Employer(s) D. None of the Above

2. Most pesticide uses involved in the production of agricultural plants on a farm, forest, nursery, or greenhouse are covered by the WPS. This includes pesticides used on plants, and pesticides used on the soil or planting medium the plants are (or will be) grown in. Both general-use and restricted-use pesticides are covered by the_____ .
A. Labeling C. WPS
B. Training D. None of the Above

3. 2 part question- Where there is no running water, early-entry workers and handlers must have at least _____ gallons of water for one employee and _____ gallons of water for two or more employees. The water must be of a “quality and temperature” that will not cause illness or injury.
A. 1- 10 C. 10-20
B. 5-25 D. None of the Above

4. Handlers must have a clean change of clothes -- such as _____ -- to put on in case their clothes become contaminated.
A. Coveralls C. Normal Clothes
B. Bloomers D. None of the Above

5. Handlers and early-entry workers must also carry _____ of water with them (or it must be "immediately" nearby on their vehicle) for emergency eyeflushing when the pesticide label requires protective eyewear (goggles or faceshield).
A. A pint C. 2 pints
B. A gallon D. None of the Above

6. All permanent mixing/loading sites regardless of whether or not the label requires_____.
A. Protective eyewear C. Permanent decontamination station(s)
B. Emergency eyewash D. None of the Above

WPS Requires Providing Decontamination Sites
7. A decontamination site must be within a _____ mile of the employees' work site.
A. 1/10 C. 1/2
B. 1/4 D. None of the Above

8. Decontamination supplies, however, need **not** be provided to _____ workers.
A. Contact early-entry C. No-contact early-entry
B. Short-term early-entry D. None of the Above

Decontamination Supply Requirements
9. Employers must make sure to provide handlers with decontamination supplies for _____and pesticide residues while they are performing handling tasks and to workers who are in a pesticide-treated area and are performing tasks that involve contact with anything that has been treated with pesticides, including soil, water, or plant surfaces.
A. Washing off pesticides C. Mix, load, or apply agricultural pesticide(s)
B. Work D. None of the Above

Worker Decontamination Supplies
10. Supplies must be located within ¼ mile of the work area if a WPS-labeled pesticide has been used within _____ days, except in those cases where low-risk pesticides (those with REIs of four hours or less) are used.
A. 72 C. 30
B. 4 D. None of the Above

Handler Decontamination Supplies
11. Supplies may be in the application area if protected from drift and spray residues. Supplies must include the following: Water—a minimum of _____gallons per handler or a potable source of tap water
A. 5 C. 3
B. 10 D. None of the Above

12. _____ if the pesticides used require protective eyewear as stated on the label; potable water may be used as eyewash
A. Decontamination site C. All permanent mixing/loading sites
B. Emergency eyewash D. None of the Above

Emergency Information

13. Provide to the worker or handler or to treating medical personnel, promptly upon emergency vehicle, request, any obtainable information on: product name, EPA registration number, and active ingredients for any product(s) to which the person may have been exposed, antidote, first aid, _____and other medical or emergency information from the product labeling, description of the way the pesticide was being used, circumstances of the worker's or handler's exposure to the pesticide.

A. Emergency assistance
B. Statement of practical treatment
C. Requirements in the standard
D. None of the Above

14. If there is reason to believe that a worker has been poisoned or injured by pesticides, the employer must make prompt transportation to a medical facility available to the worker. On request the employer must provide, to either the worker or medical personnel providing treatment, information about the product including the EPA registration number, active ingredients in any product the worker might have been exposed to in the past _____ days, antidote and other first aid information from the product labeling, and information about the application and the exposure of workers to the pesticide.

A. 30
B. 45
C. 7
D. None of the Above

Restrictions During Application

15. The handler employer must assure that: No pesticide is applied so as to contact any worker (directly or through _____) other than an appropriately trained and equipped handler.

A. Drift
B. Droplets
C. Dusts
D. None of the Above

Oral Warnings to Workers

16. Oral warnings must include the location and description of the break area.

A. True
B. False

17. Oral warnings must include the the time during which entry is restricted.

A. True
B. False

18. Oral warnings must include the weather condition before and after the the restricted-entry interval has expired.

A. True
B. False

19. Provide oral warnings to workers in a manner that they can bring home.

A. True
B. False

20. Workers who are on your establishment at the start of an application must be orally warned **before the application takes place**.

A. True
B. False

Topic 3- Bees and Related Bee-Like Insects

Identifying characteristics for the family Halictidae include:

1. In many species, the tongue is long and pointed, adapted for probing into flowers. All bees are covered with hair, to which pollen sticks when flowers are visited; most female bees have apparatus for gathering this pollen; it is combed into a special basket or brush located on the hind legs.

A. True B. False

Mason Bee

2. Smaller than a honeybee, mason bees resemble _____more than Honeybees.

A. Bumble bees C. Flies
B. Mosquitoes D. None of the above

3. Mason bees are native to _____.

A. North America C. Europe
B. South America D. None of the above

Orchid Bee Not to be confused with Orchard Bee

4. Male orchid bees have uniquely modified legs which are used to collect and store different volatile compounds throughout their lives, primarily from orchids in the sub-tribes Stanhopeinae and Catasetinae, where all species are exclusively pollinated by_____.

A. Ergonime males C. Females
B. Euglossine males D. None of the above

5. The male Eufriesea purpurata is highly unusual in actively collecting the _____in huge amounts from houses in Brazil, without suffering any harm from it.

A. Insecticide DDT C. Toxic dust
B. Pollen D. None of the above

Cuckoo Bee

6. Look for cuckoo bees flying low over the ground and foliage, hunting for foraging and nesting potential victims.

A. True B. False

7. Many cuckoo bees are closely related to their hosts, and may bear similarities in appearance reflecting this relationship. This common pattern gave rise to the ecological principle known as "_____".

A. Price's law C. Johnson standard
B. Emery's Rule D. None of the above

Queen Bumble Bee

8. The queen bumble bee comes out of hibernation every _____to find a new spot to build her nest and start a new colony.

A. Spring C. Summer
B. Full moon D. None of the above

9. The queen bee is fertilized the previous season and has managed to live through the winter months. The same nesting spots from previous seasons are rarely used.
A. True B. False

10. A suitable place for nesting is usually on the ground, beneath a flat object. An old mouse hole or similar hole in the ground is preferred if it is underneath an old tarp, flat stone or man-made objects such as a deck. The hole chosen by the queen bee is first padded by pieces of vegetation such as dry grass or moss.
A. True B. False

Topic 4 - Mosquito Section

Integrated Pest Management -Introduction

1. IPM is a science-based and common-sense approach for_____, vectors, such as mosquitoes.
A. Managing pests C. Pest monitoring
B. Surveillance D. None of the above

2. _____ is an important component to any successful IPM program because the results from the surveillance will help determine the appropriate response to an infestation.
A. Surveillance C. Lower levels of infestations
B. Pest prevention D. None of the above

3. Once mosquitoes have landed, they rely on _____to determine if we are an acceptable blood meal host.
A. Transient waters C. A number of short-range attractants
B. Torpor D. None of the above

4. Mosquitoes that hibernate in the adult stage live for 6-8 months, but spend most of that time in a_____.
A. Its life cycle C. State of torpor
B. Cocoon D. None of the above

5. Aedes adults will oviposit near the edge of the swamp or within tussocks of vegetation, requiring later flooding to _____.
A. Begin its life cycle C. Inundate the eggs for hatching
B. Look for a blood meal D. None of the above

Mosquito Life Cycle Section

6. The type of standing water in which the mosquito chooses to lay her _____depends upon the species.
A. Nest C. Eggs
B. Raft D. None of the above

7. Sections of marshes, swamps, clogged ditches, and temporary pools and puddles are all prolific mosquito breeding sites. Other locations in which some species lay their _____ include tree holes and containers such as old tires, buckets, toys, potted plant trays, and saucers and plastic covers or tarpaulins.
A. Nest C. Eggs
B. Raft D. None of the above

8. The mosquito goes through three distinct stages during its life cycle.
A. TRUE B. FALSE

Wrigglers and Tumblers
9. After the female mosquito obtains a blood meal, she lays her eggs directly on the surface of stagnant water, in a depression, or on the edge of a container where rainwater may collect and flood the eggs.
A. TRUE B. FALSE

10. The larva lives in the water, feeds, and develops into the third stage of the life cycle called a pupa or "_____".
A. Ergatoids C. Wrigglers
B. Tumbler D. None of the above

11. Mosquitoes may overwinter as eggs or,_____.
A. Fertilized adult females or larvae C. Wriggler
B. Ergatoids D. None of the above

12. Mosquitoes belonging to the genus Culex lay their _____ in bunches or "rafts."
A. Tumblers C. Eggs
B. Cocoons D. None of the above

Weather
13. Mosquito development and population dynamics are closely tied to weather. When and how much rain is received, wind speed and direction, maximum and minimum temperatures, and the total amount of heat energy accumulated are all critical to mosquito development.
A. TRUE B. FALSE

Water Source
14. The water (or lack thereof) in a habitat directly does not affects mosquito reproduction. Very few mosquitoes need standing water to complete their development.
A. TRUE B. FALSE

15. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.
A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

16. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.
A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

17. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.
A. Out-of-doors at night C. Northern half
B. Southern parts D. None of the above

18. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.
A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

19. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

20. Culex pipiens is a serious pest, called the "house mosquito" because it commonly develops in small containers around the home. It shows great skill in finding ways to get into the house, where it feeds on_____.
A. Birds C. Effluent from sewage treatment plants
B. The occupants at night D. None of the above

Topic 5- Mosquito Identification Section

1. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.
A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

2. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.
A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

3. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.
A. Out-of-doors at night C. Northern half
B. Southern parts D. None of the above

4. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.
A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

5. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

6. Malaria was a serious plague in the United States for centuries until its final eradication in the 1950s. Despite the ostensible eradication, there are occasional cases of autochthonous (local) transmission in the U.S. vectored by An. quadrimaculatus in the east and Anopheles freeborni in the west.
A. True B. False

7. Culex pipiens can be found in a fairly limited range of larval habitats, but are generally associated with water that has a low organic content.
A. True B. False

8. Culex pipiens' main host is wild donkeys, but it also feeds freely on a wide variety of warm-blooded vertebrates, including birds.
A. True B. False

9. Culex pipiens is a serious pest, called the "house mosquito" because it commonly develops in small containers around the home. It shows great skill in finding ways to get into the house, where it feeds on_____.
A. Birds C. Effluent from sewage treatment plants
B. The occupants at night D. None of the above

10. Culex tarsalis breeds in nearly every freshwater source except _____. Larvae are found in all but the most polluted ground pools.
A. Treeholes C. Effluent from sewage treatment plants
B. Ground water D. None of the above

11. Culex tarsalis is the most important carrier of _____ in much of the western U.S.
A. WEE C. Western equine and Saint Louis encephalitis
B. Malaria D. None of the above

12. As mosquitoes go, the Western Encephalitis Mosquito is one of the more easily recognizable, with its _____.
A. Distinctive scale patterns C. High pitched scream
B. Distinct ring around the proboscis D. None of the above

13. Species in the genus Culex are known as “snowpool” mosquitoes.
A. True B. False

14. Woodland Malaria mosquitoes have four life stages: egg, larva, pupa, and adult. The immature stages need standing water to complete their life cycle.
A. True B. False

Effective Mosquito-Control Program
15. Initial surveys identify the species of mosquitoes present and provide general information on locations, densities and disease potential. With this knowledge it may be possible to determine life cycles and feeding preferences; predict larval habitats, adult resting places and flight ranges; and perhaps even make preliminary recommendations for control programs.
A. True B. False

Topic 6- Wood Destroyers- Termite Section

Feeding Habits
1. Termites feed primarily upon wood and wood products containing _____.
A. Moisture C. Fungi
B. Cellulose(s) D. None of the above

2. Termites have distinct protozoa in their intestine that provide enzymes to digest _____.

A. Moisture
B. Cellulose(s)
C. Wood
D. None of the above

Below Ground Termite Colonies

3. The colony may be up to _____ deep in the ground. The ground serves as a protection against extreme temperatures and provides a moisture reservoir.

A. 18-20 inches
B. 8-12 feet
C. 18-20 feet
D. None of the above

4. Termites obtain wood or _____ above ground by constructing and traveling through earthen (mud) tubes?

A. Nest
B. Cellulose materials
C. Mud
D. None of the above

5. These are _____?

A. Soldiers
B. Workers
C. Swarmers
D. None of the above

Above Ground Termite Colonies

6. Which of the following do not need a connection to soil and there is no soil in their feeding galleries? They do not build mud tunnels; they construct large, irregular galleries that run across and with the wood grain, with a very smooth, clean, and sandpaper-like appearance.

A. Drywood termites
B. Desert subterranean termite(s)
C. Western subterranean termite(s)
D. None of the above

Workers

7. The first broods of newly hatched nymphs (young termites) generally develop into _____.

A. Soldier(s)
B. Worker(s)
C. Alates
D. None of the above

Termite Identification Section

8. Which of the following is native to most forest areas where it performs the important task of breaking down the large quantities of dead and fallen trees and other sources of cellulose that continuously accumulate in the forests?

A. Formosan termite(s)
B. Desert subterranean termite(s)
C. Western subterranean termite(s) or Subterranean
D. None of the above

9. Which of the following termites are responsible for guarding the colony and its occupants? Termites continually groom each other to obtain certain secretions. These secretions help regulate the number of individuals in the various castes.

A. Soldier(s)
B. Worker(s)
C. Alates
D. None of the above

10. Which of the following do not need a connection to soil and there is no soil in their feeding galleries? They do not build mud tunnels; they construct large, irregular galleries that run across and with the wood grain, with a very smooth, clean, and sandpaper-like appearance.

A. Formosan termite(s)
B. Drywood termite(s)
C. Western subterranean termite(s) or Subterranean
D. None of the above

11. Which of the following have three primary castes: nymphs, reproductives and soldiers. The reproductive, also known as alates, are often up to ¾-inches long and have dark-brown wings and dark-brown bodies? Nymphs are cream colored and soldiers have brownish-colored heads with very large mouthparts that are used to help defend the colony from predators.

A. Formosan termite(s)
B. Desert subterranean termite(s)
C. Nevada Drywood termite(s)
D. None of the above

12. Which of the following is a broad-spectrum pyrethroid insecticide. It is available in dusts, emulsifiable concentrates, smokes, ULV concentrates, and wettable-powder formulations?

A. Termidor®
B. Permethrin
C. Chlorfenapyr
D. None of the above

13. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.

A. Boron
B. Fipronil
C. Chlorfenapyr
D. None of the above

14. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.

A. Termidor®
B. Permethrin
C. Boron
D. None of the above

15. Which of the following is registered as a termiticide under the tradename Phantom®?

A. Termidor®
B. Fipronil
C. Chlorfenapyr
D. None of the above

Termite Product Applications

16. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.

A. 5 & 20 C. 2 & 5
B. 4 & 10 D. None of the above

17. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.

A. 1 to 1 1/2 C. 1 to 2
B. .5 to 1 D. None of the above

Crawl Spaces

18. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.

A. 18 inches C. 6 inches
B. 24 inches D. None of the above

19. Do not treat soil in _____ with a broadcast insecticide spray.

A. Insecticide barrier C. Interior vertical barrier
B. Crawl space area D. None of the above

Hollow Masonry Units of the Foundation Walls

20. Treat through masonry voids to provide a _____ at the top of the footing.

A. Insecticide barrier C. Spray barrier
B. Continuous chemical barrier D. None of the above

Topic 7- Termite and Wood Destroyer Management Section

1. Which of the following is a broad-spectrum pyrethroid insecticide. It is available in dusts, emulsifiable concentrates, smokes, ULV concentrates, and wettable-powder formulations?

A. Termidor® C. Chlorfenapyr
B. Permethrin D. None of the above

2. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.

A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

3. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.

A. Termidor® C. Boron
B. Permethrin D. None of the above

4. Which of the following is registered as a termiticide under the tradename Phantom®?

A. Termidor® C. Chlorfenapyr
B. Fipronil D. None of the above

5. Which of the following acts on the mitochondria of cells and uncouples or inhibits oxidative phosphorylation, preventing the formation of the crucial energy molecule adenosine triphosphate (ATP)? As a result, energy production in the cells shuts down, resulting in cellular and, ultimately, termite death?
A. Chlorfenapyr C. Fipronil
B. Permethrin D. None of the above

6. Which of the following works by blocking the gamma-aminobutyric acid (GABA) regulated chloride channel in neurons, thus disrupting the activity of the insect's central nervous system?
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

Termite Product Applications
7. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.
A. 5 & 20 C. 2 & 5
B. 4 & 10 D. None of the above

8. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.
A. 1 to 1 1/2 C. 1 to 2
B. .5 to 1 D. None of the above

Crawl Spaces
9. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.
A. 18 inches C. 6 inches
B. 24 inches D. None of the above

10. Do not treat soil in _____ with a broadcast insecticide spray.
A. Insecticide barrier C. Interior vertical barrier
B. Crawl space area D. None of the above

Hollow Masonry Units of the Foundation Walls
11. Treat through masonry voids to provide a _____ at the top of the footing.
A. Insecticide barrier C. Spray barrier
B. Continuous chemical barrier D. None of the above

12. When treatment is necessary, access holes must be drilled through mortar joints below the_____, as close as possible to the footing.
A. Insecticide barrier C. Interior vertical barrier
B. Sill plate D. None of the above

13. State regulations require pest control operators to remove termite tubes as part of a lifetime protection.
A. TRUE B. FALSE

14. Removing the tubes provides a way to determine if a termite infestation remains _____after treatment or if the termites reappear in the same area later.
A. Active C. Complete termite treatment
B. Dormant D. None of the above

15. Control products containing inorganic borate can be applied to lumber at the time of construction, or later if exposed, to provide lifetime protection from infestation as long as the wood remains dry.
A. TRUE B. FALSE

Topic 8- Wood Borers- Beetles Section

1. This insect bores in trees as larvae. The adults resemble wasps in many cases.
A. Clear-winged moth C. Locust borer adult
B. Pine sawyer adult D. None of the above

2. This insect's life cycle is spent as the larva in the tree. They feed for a period of from 2-4 years and bore in the heartwood and sapwood. Infested trees can be weakened and break. A related species, causes galls on smaller limbs of poplars and aspens.
A. Carpenter ant C. Poplar borer larva
B. Clear-winged larva D. None of the above

3. This insect is a large caterpillars that grow to almost three inches long. They mine the heart wood of trees. They attack poplars and cottonwoods and can attack many other trees as well.
A. Bark beetle adults C. Shot-hole borer
B. Carpenter worm D. None of the above

4. This insect can extensively mine limbs of susceptible trees. Poplars, willow, and cottonwood trees are hosts of several species.
A. Poplar borer C. Clear-winged moth larva
B. Ants D. None of the above

5. This insect is a pest because it mines in the ends of the new twigs of fruit trees and ornamental fruit trees. The new twigs start to grow and then wilt because these larvae are tunneling down the center of them. Adults are small grey moths.
A. Black moth C. Peach twig borer larva
B. Woody moth D. None of the above

6. The adult insect becomes a large grey moth.
A. Carpenter worm adult C. Poplar moth larva
B. Pine sawyer moth D. None of the above

7. This insect attacks black locust trees. The strikingly colored adults emerge in the fall and can be seen feeding on goldenrod.
A. Carpenter bees C. Locust borer adult
B. Pine sawyer larva D. None of the above

8. This insect commonly infests ash. The larvae look like those of the locust borer only smaller. It will attack elm, linden, redbud, and oak as well as ash trees.
A. Bronze birch borer larva C. Poplar and willow borer larva
B. Red headed ash borer adult D. None of the above

9. This insect attacks pine trees and are usually found around homes as a result of being brought in with firewood. They seldom attack pine trees in residential plantings.
A. California laurel borer adult C. Pine sawyer adult
B. Red headed ash borer adult D. None of the above

10. This striking insect, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. Bronze birch borer adult C. Poplar and willow borer larva
B. Red headed ash borer adult D. None of the above

11. Paper birches are frequently attacked by this insect. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the California laurel borer.
A. Bark Beetle C. Pine sawyer adult
B. Bronze birch borer adult D. None of the above

12. The larvae mine the sapwood. Swollen areas on limbs show where the larvae feed and frass can be seen being forced out of holes in the bark as the larva feeds.
A. California laurel borer larva C. Poplar and willow borer larva
B. Red headed ash borer larva D. None of the above

13. Although not true borers, this insect attacks several evergreen trees. The adults usually emerge in mid-summer and lay eggs.
A. Bark beetle adults C. Shot-hole borer
B. Poplar borer D. None of the above

14. This insect attacks weakened or dead trees and shrubs. They feed deeper in the wood than bark beetles. The larvae are legless grubs.
A. Bark beetle adults C. Shot-hole borer
B. Carpenter bee D. None of the above

15. There are many bark beetle genera, of which the most important with respect to forest damage are Dendroctanus, Pitch, and Acolytes.
A. TRUE B. FALSE

16. Adult bark beetles bore through the inner cambial to the outer bark layer, where they channel in galleries in which to lay eggs.
A. TRUE B. FALSE

17. Pine bark beetles in Arizona are generally of the genus Ips or Dendroctonus. However, several other genera also attack pine, including: Hylastes, Hylurgops, and Pityogenes.
A. TRUE B. FALSE

18. Often several species will attack at the same time. Identification of specific beetle species can be difficult. Identification can be aided by knowing the host species attacked, time of year, and the design of the galleries (tunnels) created by the adults and larvae.
A. TRUE B. FALSE

19. Dust caused by boring in the bark crevices and at the tree base is another sign of Bark Beetles.
A. TRUE B. FALSE

20. A black tint may be present in the pitch. The presence of one or two pitch tubes means that a beetle was successful. Often a few pitch tubes can indicate that the tree unsuccessfully repelled the attacking beetle. Clear sap that runs down the bole (trunk) or limbs is generally from bark beetles.
A. TRUE B. FALSE

Topic 9- Arachnid Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern

Spider Reproduction

1. All species of spiders have two separate sexes, and the males are usually larger than the females.
A. True B. False

2. _____ includes spiders and scorpions, mites and ticks, horseshoe crabs, daddy-longlegs, and extinct "sea-scorpions", to name a few.
A. The Chelicerata C. The Nematodes
B. The Chaetognatha D. None of the above

Spider Introduction

3. The spider then liquefies the tissues of the prey with a digestive fluid and sucks this broth into its_____, where it may be stored in a digestive gland.
A. Digestive gland C. Stomach
B. Cephalothorax D. None of the above

Spider's Life
Biology

4. The _____is strong and stiff, while the cuticle of the abdomen is soft and extensible.
A. Chelicerae cuticle C. Cephalothorax cuticle
B. Pedipalp cuticle D. None of the above

Spider Reproduction

5. All species of spiders have two separate sexes, and the males are usually larger than the females.
A. True B. False

6. A sexually mature male spider uses its pedipalp cuticle to transfer sperm cells into the female during mating. In this process, the male builds a sperm tower, onto which he deposits a drop of sperm from his abdomen.
A. True B. False

Types of Spider Webs
7. Web patterns vary considerably, depending on the species of spider. Perhaps the most recognizable web is the_____, in which an outer framework supports a continuous spiraling thread and a series of threads radiating from the center of the web.
A. Horizontal silk sheet with a dome
B. A tight or wide mesh web
C. Almost circular orb web
D. None of the above

Web Building
8. Spiders that weave orb webs generally begin by spinning a thread that is carried by _____ until it catches on a tree limb or other firm support. From this thread, the spider lays down another thread to form _____ that is the basic framework of the web.
A. Silk glands or glands - W-shaped structure
B. Air currents - Y-shaped structure
C. A raised tube in the corner – X -shaped structure
D. None of the above

Constructing an Orb Web
9. After having made the web, the spider will wait on or near the web for its prey to fall victim to its sticky trap.
A. True B. False

Spider Web Uses
10. Some species of spiders do not use their webs for catching prey directly, some spiders pounce from hiding such as trapdoor spiders, or some chase down their prey such as the wolf spider.
A. True B. False

Topic 10- Spider Identification Section

Two Primary Spider Groups
1. _____construct webs in rather quiet, undisturbed places to capture their food. They live in or near their web and wait for food to come to them. They generally have poor eyesight and rely on sensing vibrations in their web to detect prey.
A. Hobo spider(s)
B. Web-building spiders
C. Pirate spider(s)
D. None of the above

Jumping Spiders
2. Jumping spiders are generally small to medium-sized (about 1/5 - 1/2 inch long) and compact-looking. They are usually _____ with _____, although some can be brightly colored, including some with iridescent mouthparts.
A. Dark-colored – White markings
B. Light colored – Dark markings
C. White-colored – Black markings
D. None of the above

Ground Spiders
Crab Spider
3. Small crab spiders are dark or tan; some are lightly colored orange, yellow or creamy white. Their legs extend out from their sides causing them to scuttle back and forth in a crab-like fashion. These spiders hide in flower blossoms and may be brought inside in cut flowers.
A. True B. False

Brown Recluse Spider
4. The most definitive physical feature of recluse spiders is their eyes: most spiders have _____ eyes that typically are arranged in two rows of _____, but recluse spiders have _____equal-sized eyes arranged in three pairs.
A. 6 – 8 -- 3 C. 8 – 4 - 6
B. 3 – 6 - 8 D. None of the above

Cyphophthalmi
5. The Cyphophthalmi are a suborder of harvestmen, with about _____ genera, and more than _____ described species.
A. 100 - 36 C. 50 - 1000
B. 36 - 100 D. None of the above

Mygalomorphae
6. The Mygalomorphae, (also called the Orthognatha), are an infraorder of spiders. The latter name comes from the orientation of the fangs which point straight down and do not cross each other (as opposed to _____).
A. Australasian funnel-web spiders C. Theraphosa blondi
B. Araneomorph D. None of the above

7. Almost all species of Mygalomorphae have _____ eyes, however there are some with fewer (Masteria lewisi has only _____ eyes).
A. 6 – 8 C. 8 - 6
B. 3 - 8 D. None of the above

8. Unlike Araneomorphae, which die after about a year, Mygalomorphae can live for up to _____years, and some don't reach maturity until they are about _____years old. Some flies in the family Acroceridae which are endoparasites of mygalomorphs may remain dormant in the book lungs for as long as _____ years before beginning their development and consuming the spider.
A. 30 – 6 - 25 C. 25 – 6 - 20
B. 10 – 3 - 20 D. None of the above

Solifugae (Sun Spiders or Wind Scorpions)
9. Most Solifugae species live in deserts and feed opportunistically on ground-dwelling arthropods and other animals.
A. True B. False

Vinegarroons
10. The Vinegarroons' acetic acid gives this spray a vinegar-like smell, giving rise to the common name vinegarroon.
A. True B. False

Topic 11- Web Spider Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Orb Weaving Spiders

1. Venom toxicity - the bite of Orb-Weaving Spider is of high risk (toxic) to humans.

A. True B. False

Trap-Door Spiders

2. Venom toxicity - the bite of the Trap-Door Spider is of low risk (non-toxic) to humans. It is a non-aggressive spider - usually timid but may stand up and present its fangs if harassed. Rarely bites - but if so it can be painful.

A. True B. False

House Spider

3. The spider's web forms a tube, and the narrowed end serves as a retreat where the spider can hide. When an insect walks over the _____, the spider immediately rushes out from the funnel, grabs its victim, and delivers a poisonous bite. The spider then carries its prey back to its retreat, where it begins to feed.

A. Sheet web C. Oval web
B. Trap web D. None of the above

Garden Spiders

4. Garden spiders belong to the family Araneidae, a group of _____ different species of spiders that weave orb, or circular, webs.

A. 36 C. 2,500
B. 5,000 D. None of the above

Hobo Spider Information

5. The hobo spider is a member of the funnel-web spider family _____.

A. Solifugae C. Agelenidae
B. Araneomorphae D. None of the above

Spider Bite Section

6. All spiders (except the family _____) have venom glands, but not all are venomous to man. In fact very few species pose a threat to man. Some spider bites might need medical attention even if the species is recognized as not being venomous to man, as secondary infections can occur.

A. Uloboridae C. Agelenidae
B. Araneomorphae D. None of the above

7. Spider venom, like bee venom, is non-fatal.

A. True B. False

8. A patient may also have symptoms from a spider bite such as a red, itchy rash over the torso, arms and legs that is usually seen in the first 24-72 hours. Patients may have pain in the muscles and joints, fever, chills, swollen lymph nodes, headaches, and nausea and vomiting.

A. True B. False

9. Cytotoxic venom affects the cellular tissue**,** usually restricted to the area of the bite, but it can spread. The bite is at first painless, with symptoms developing about 2 to 8 hours after the bite. It starts by resembling a mosquito sting, becoming more painful and swollen. Eventually it ulcerates into a large surface lesion (up to 10 centimeters) that will require medical attention. This type of bite would result from members of the genera _____(family Sicariidae) and _____ (family Miturgidae).

A. Loxosceles - Cheiracanthium
B. Loxosceles - Araneomorphae
C. Mygalomorphae - Loxosceles
D. None of the above

Jumping Spiders

10. The _____is probably the most common biting spider in the United States. People are caught by surprise and scared when they see the spider jump, especially if it jumps towards them.

A. Brown recluse spider(s)
B. Trap-Door Spider(s)
C. Jumping spider(s)
D. None of the above

Topic 12- Tick Section

(S) means the answer may be plural or singular in nature. Or means either answer may work.

1. More than 800 species of ticks inhabit the planet. They are second only to mosquitoes as vectors of human disease,_____.

A. Including parasitic mechanisms
B. Causing allergic reaction(s)
C. Both infectious and toxic
D. None of the above

2. Ixodidae or Hard Ticks >700 species are distinguished from the Argasidae by the presence of a _____or hard shield.

A. Idiosoma
B. Capitulum (head)
C. Scutum
D. None of the above

Life cycle and reproduction

3. _____ticks undergo three primary stages of development: larval, nymphal, and adult.

A. Only Argasidae or Argasid
B. Only Dermacentor
C. Both ixodid and argasid
D. None of the above

Ixodidae

4. Ixodid ticks require three hosts, and their life cycle takes at least one year to complete. Up to 3,000 eggs are laid on the ground by an adult female tick.

A. 100
B. 3,000
C. 500
D. None of the above

5. All ticks have an incomplete metamorphosis: after hatching from the egg a series of similar stages (instars) develop from a_____, to eight legged nymph and then a sexually developed eight legged adult.

A. Six legged larva
B. Seven instar
C. Eight legged larva
D. None of the above

6. Between each stage there is a molt (ecdysis) which enables the developing tick to expand within a new_____.
A. Idiosoma C. External skeleton
B. Haller's organ D. None of the above

7. The family _____ contains the important genera Amblyomma, Dermacentor, Haemaphysalis, Hyalomma, Ixodes, Margaropus, and Rhipicephalus. Also the important boophilid ticks, formerly of the genus Boophilus, are now classified as a sub-genus within the genus Rhipicephalus.
A. Ornithodoros C. Dermacentor
B. Ixodidae D. None of the above

8. The cement serves to hold the _____ in place while the tick feeds.
A. Idiosoma C. Mouthparts
B. Capitulum D. None of the above

9. _____on larval and nymphal ticks are small with less penetration and produce a smaller host reaction.
A. Idiosoma C. Mouthparts
B. Hypostome D. None of the above

10. Adult Ixodes and _____ticks have long mouthparts that can reach the sub dermal layer of skin, produce a larger reaction, and make the tick harder to remove.
A. Argasidae or Argasid C. Dermacentor
B. Amblyomma D. None of the above

Please complete the entire assignment before submitting the answer key

Topic 13 -Tick Identification Section

Deer Tick Life Cycle

1. The deer tick passes through four life stages (egg, larva, nymph, adult), over a _____
A. Two month period C. Two year period
B. Three month period D. None of the above

Egg to Larvae

2. Eggs are fertilized in the fall and deposited in leaf litter the following_____.
A. Summer C. Spring
B. Month D. None of the above

3. The larvae then drop off their host into the leaf litter where they molt into the next stage, the nymph, remaining dormant until the following _____.
A. Summer C. Spring
B. Month D. None of the above

Larvae to Nymph

4. During the spring and early summer of the next year the nymphs end their dormancy and begin to seek a host. _____ are commonly found on the forest floor in leaf litter and on low lying vegetation.
A. Nymph(s) C. Females
B. Seven instars D. None of the above

Nymph to Adult

5. Over the next few months the nymph molts into the larger adult tick, which emerges in fall, with a peak in October through November. _____find and feed on a host, then the females lay eggs sometime after feeding.

A. Both male and female adults C. Larvae
B. Seven instars D. None of the above

Adult Ticks

6. In the fall of the second year, nymphs molt into adult ticks. Female adults are _____and larger than males.

A. Red or orange C. Black
B. Black and red D. None of the above

7. As female ticks feed over the course of several days, their bodies slowly enlarge with blood (engorge). Adult females infected with disease agents as _____may transmit disease during this feeding.

A. Both male and female adults C. Several nymphal stages
B. Larvae or nymphs D. None of the above

8. _____ticks attach, but do not feed or become engorged. Because the adult males do not take a blood meal, they do not transmit Lyme disease, human anaplasmosis, or babesiosis.

A. Nymph(s) C. The adult female
B. Male D. None of the above

Lone Star Tick Amblyomma americanum

9. Each female produces _____ eggs, which are deposited under leaf and soil litter in middle to late spring.

A. 300-800 C. 3,000-8,000
B. 30,000-80,000 D. None of the above

Winter Tick Dermacentor albipictus

10. _____is found throughout North America. It is widely distributed throughout California, but populations are concentrated around the central coastal and sierra foothill areas. It primarily feeds on horses and deer from fall through early spring. Heavy infestations of horses may cause emaciation and anemia (Furman and Loomis 1984).

A. This two host tick C. This one host tick
B. This no host tick D. None of the above

Topic 14 - Cockroach Section

Introduction

1. There are approximately 4,000 roach species are known worldwide; most cockroaches inhabit the warm tropical regions of the globe.

A. True B. False

2. Cockroaches leave feces as well as emitting airborne pheromones for nesting. These chemical trails transmit bacteria on surfaces.

A. True B. False

3. Roaches can survive without food for up to a month.
A. True B. False

Collective Decision-Making
4. Sociable cockroaches often display _____when choosing food sources.
A. Collective decision-making C. Two pieces of information
B. Pheromones D. None of the Above

Cockroach Life Cycle
5. All roaches have three stages in their life cycle -- egg, nymph (young) and adult. Some have live birth and others lay eggs.
A. True B. False

Reproduction
6. Cockroaches use pheromones to attract mates, and the males practice courtship rituals, such as posturing and _____.
A. Stridulation C. Form of breathing
B. Three stages D. None of the Above

7. Female cockroaches are sometimes seen carrying egg cases on the end of their abdomens; the German cockroach holds about 300 to 400 long, thin eggs in a case called an ootheca.
A. True B. False

Lungs and Breathing
8. Cockroaches, like all insects, breathe through a system of tubes called?
A. Tracheae C. Lungs
B. Ootheca D. None of the Above

9. While cockroaches do not have _____ and thus do not actively breathe in the vertebrate lung manner, in some very large species the body musculature may contract rhythmically to forcibly move air out and in the spiracles; this may be considered a form of breathing.
A. Tracheae C. Lungs
B. Ootheca D. None of the Above

Summary of Most Commonly Found Types of Cockroaches
10. Which roach is the largest cockroach commonly found within dwellings, measuring about 1 1/2 inches long when fully grown?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

11. Which roach species is far less common than the German cockroach, but occasionally can be a problem in homes?
A. Brownbanded Cockroach C. Oriental Cockroach
B. American Cockroach D. None of the Above

12. Which roach require warmth, moisture, and food, which is why they are most common in kitchens and bathrooms?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

13. Which roach is shiny black or dark brown, and the adult is about 1-inch long?
A. Oriental Cockroach C. Brownbanded Cockroach
B. German Cockroach D. None of the Above

14. Although the usual habitat for which cockroaches is outdoors, they often appear in homes, especially in wooded settings.
A. Oriental Cockroach C. Wood Cockroaches
B. German Cockroach D. None of the Above

15. Which roach is by far the most common cockroach infesting homes and buildings?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

Topic 15 – Common Cockroach Classifications Section

1. Giant cockroaches or blaberids (family Blaberidae) are the largest cockroach family. Commonly these live intside and people keep these pests as pets. 13 species in 20 genera in North America.
A. True B. False

2. The Blattellidae is a family of the order Blattaria (cockroaches). This family contains many of the smaller common household cockroaches, among others.
A. True B. False

3. The Blattidae is a family of the order Blattaria (cockroaches). It contains several of the least common household cockroaches.
A. True B. False

Scientific Classification

4. Cockroaches make up the order Blattodea, which contains five families.
A. True B. False

5. Which of the following are a live bearing species that grow to three inches or more?
A. Brownbanded Cockroach C. Death Head Roaches
B. Desert Cockroach D. None of the Above

6. The Field cockroach is very similar in appearance to which cockroach?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

7. Which missing cockroach with Blatella germanica, the Asian cockroach, Blatella asahinai, and the brownbanded cockroach, Supella longipalpa, are in the family Blatellidae?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

8. Which males are 18-20 mm (¾") long and have a delicate brown-on-tan pattern on the pronotum. The wings are a mottled tan and longer than the abdomen?
A. Brownbanded Cockroach C. Desert Cockroach
B. American Cockroach D. None of the Above

9. Which females are 12-14 mm (½") long and have a broadly oval, somewhat hump-backed appearance?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

10. Which cockroach is about 5/8 inch long, overall light brown in color with wings that cover the abdomen? The thoracic shield just behind the head (pronotum) is marked with two prominent black stripes.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

11. Which cockroach is similar to the German cockroach in appearance, but it occurs primarily outdoors where it feeds on decaying plant materials. Compared to the German cockroach, it is more active during daylight hours and will be found around lights. They also are known to fly when disturbed.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

12. Which cockroach 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. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

13. Which cockroach is common outdoors, and lives in warm damp shady areas near the ground or any area containing natural debris. It will often seek refuge indoors when a drop in temperature occurs, but is still quite tolerable of cooler weather?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Outside Living
14. Which cockroach is found outdoors, applications of insecticides to foundation plantings, wood piles, mulch, and other infested locations are recommended?
A. Oriental cockroach C. Smokybrown cockroach
B. Brownbanded cockroach D. None of the Above

Chemical Control
15. Perimeter insecticide sprays may aid in the reduction of cockroaches entering homes from the exterior.
A. True B. False

Topic 16 – Cockroach Inspection and Treatment Section

Sanitation Elimination of Food Resources
1. Which roach can remain alive for approximately 2 weeks with no food or water and for 42 days if only water is available?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Elimination of Moisture Resources

2. The single most important factor in determining cockroach survival is availability of?
A. Dark crevices C. Food
B. Water D. None of the Above

3. German cockroaches live less than two weeks when there is no supply of _____even if food is abundant.
A. Dark crevices C. Food
B. Free water D. None of the Above

Dark Locations – Similar to Rodents

4. In addition to food and water, cockroaches need _____in which to rest and breed, and these harborages must be identified during the inspection. Once again, use your knowledge of the target pest to focus your efforts.
A. Dark crevices C. Daytime hiding places
B. Water D. None of the Above

5. German cockroaches prefer dark crevices close to?
A. Dark crevices C. Food
B. Moisture D. None of the Above

6. Cockroaches prefer bare wooden surfaces, cardboard or paper because these surfaces are easier to climb and because porous surfaces retain their?
A. Aggregation pheromone C. Food
B. Water D. None of the Above

IPM Methods for Cockroaches (Types of Pest Control)

7. IPM programs use current, comprehensive information on the life cycles of pests and their
A. Pest management evaluations C. Judicious use of pesticides
B. Interaction with the environment D. None of the Above

8. IPM takes advantage of all appropriate _____ including, but not limited to, the judicious use of pesticides.
A. Entry and establishment C. Pest management options
B. Target of many insecticides D. None of the Above

9. IPM is not a _____but, rather, a series of pest management evaluations, decisions and controls. In practicing IPM, growers who are aware of the potential for pest infestation follow a four-tiered approach.
A. Pest management evaluations C. Single pest control method
B. Interaction with the environment D. None of the Above

Summary

Prevention

10. Entry and establishment of roach colonies can be prevented by _____of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.
A. Close inspection C. Pest management options
B. Target of many insecticides D. None of the Above

Sanitation

11. Good housekeeping is the _____in preventing and controlling cockroach populations. Cockroaches cannot live without food, water and shelter. Do not allow food particles to remain on shelves or floors.

A. Pest management evaluations
B. Most important factor
C. Judicious use of pesticides
D. None of the Above

Keys for Cockroach Control and/or Elimination
Chemical Control

12. Cockroaches have been the target of many insecticides over the years but they have _____to several of them.

A. Entry and establishment
B. Target of many insecticides
C. Developed resistance
D. None of the Above

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

A. True B. False

Residual Sprays - Introduction

14. Residual sprays are generally easy and fast to apply.

A. True B. False

15. These formulations are oil-based or water-based emulsions and water-based suspensions (wettable powders).

A. True B. False

Topic 17 - Pesticide Applicator Section

1. Rinsate from the containers, when added directly into the_____, efficiently and economically uses all pesticide in the container. This eliminates the need to store and later dispose of the rinsate.

A. Sprayer tank
B. Ground water
C. Potential source of pesticide exposure
D. None of the above

2. Unless rinsed from the container immediately, _____ will solidify and become difficult to remove.

A. Contamination
B. Rinsing
C. Some pesticides
D. None of the above

3. _____containers removes a potential source of pesticide exposure to people, animals, and wildlife.

A. Rinsate
B. Rinsing
C. Potential source of pesticide exposure
D. None of the above

4. _____ is required by federal and state regulations and is a good, sound agricultural and environmental practice.

A. Rinsing
B. Pesticide containers
C. Proper rinsing
D. None of the above

Rinsing Helps Protect the Environment

5. _____reduces a potential source of contamination of soil, surface, and ground water.

A. Potential source of pesticide exposure
B. Pesticide container recycling
C. Proper rinsing of pesticide containers
D. None of the above

6. When contamination occurs, plants and animals may be harmed and water supplies affected. Prevention of environmental contamination is always better than cleanup. _____also helps in reducing the problem of handling pesticide wastes.

A. Contamination
B. Pesticide containers
C. Rinsing
D. None of the above

7. No matter how an empty pesticide container is disposed of**,** it must be properly_____ .

A. Rinsate
B. Disposed in the trash
C Rinsed and triple punched
D. None of the above

8. Both federal and state laws require rinsing. Landfill operators and recyclers can only accept_____ .

A. Contamination
B. Properly rinsed containers
C. Pesticide containers
D. None of the above

9. Pesticide containers should only be offered to recycling projects designed for pesticide containers and not general plastic and metal recycling programs.

A. TRUE B. FALSE

Federal Pesticide Recordkeeping Requirements

10. The EPA currently requires certified commercial applicators to keep records under regulations implementing the Federal Insecticide, Fungicide, and Rodenticide Act (**FIFRA**). The EPA is prohibited from requiring certified private applicators to maintain _____. However, some individual States require certified private applicators to maintain records.

A. Record(s)
B. EPA registration number
C. Restricted use pesticide
D. None of the above

The recordkeeping requirements are:

11. The brand or product name, and the _____ of the restricted use pesticide that was applied;

A. Location of the application
B. EPA registration number
C. Spot application(s)
D. None of the above

12. The total amount of the _____ applied;

A. Location of the application
B. Restricted use pesticide
C. Spot application(s)
D. None of the above

13. The location of the application, the_____ , and the crop, commodity, stored product, or site to which a restricted use pesticide was applied;

A. Size of area treated
B. EPA registration number
C. Restricted use pesticide
D. None of the above

14. The name and certification number (if applicable) of the certified applicator who applied or who supervised the application of the _____.
A. Record(s) C. Restricted use pesticide
B. Chemical treatment D. None of the above

15. The _____were amended to require a more detailed description of the location of a "spot application."
A. Location of the application C. Regulations
B. EPA registration number D. None of the above

16. _____ must be recorded with the following information: Brand or product name and EPA registration number; total amount applied; location must be designated as "spot application," followed by a concise description of the location.
A. Location of the application C. Spot application(s)
B. Record(s) D. None of the above

17. When working with _____is long sleeves, long pants, shoes and socks, rubber gloves, and splash-proof eye protection, regardless of the toxicity level of the pesticide.
A. Chronic exposure C. Highly toxic pesticides
B. Pesticides D. None of the above

18. The _____ include wearing a double layer of clothing. This can be accomplished by wearing coveralls over the long pants and longsleeve shirt, and rubber boots over the shoes and socks.
A. EPA's recommendation(s) C. EPA'S requirements
B. OSHA's recommendations D. None of the above

19. The use of gloves is _____ when working with highly toxic pesticides. It is recommended that only unlined rubber or neoprene (nitrile, etc.) gloves be used when handling or using all pesticides.
A. Mandatory C. EPA'S requirements
B. OSHA's recommendations D. None of the above

20. Gloves should be at least _____ inches long to provide adequate protection for wrists and the cuffs should be inside sleeves for most work. This will keep runoff pesticide from getting into the gloves. However when working overhead put the cuffs of gloves outside sleeves.
A. 6 C. 12
B. 8 D. None of the above

California DPR Requirement

The Assignment must be submitted to TLC by December 27 in order to be submitted to DPR by the 30th. If it is late, you will be penalized $50 per day.

Advanced Pest Control Assignment # 4 T-Z Last Names

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 80%. 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.

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.

Topic 1- Pesticide Section

1. _____used to control diseases of humans or animals (such as livestock and pets) are not considered pesticides and are regulated by the Food and Drug Administration.
A. Drugs
B. Biological control agent(s)
C. Biochemical pesticide(s)
D. None of the above

2. Fertilizers, nutrients, and other material used to promote plant survival and health are not considered plant growth regulators and thus are_____.
A. Biochemical pesticide(s)
B. Not pesticides
C. Biological control agent(s)
D. None of the above

3. _____, excluding certain microorganisms, are exempted from regulation by the EPA. (Biological control agents include beneficial predators such as birds or ladybugs that eat insect pests.)
A. Biochemical pesticide(s)
B. Biological control agent(s)
C. Insect growth regulator (IGR)
D. None of the above

4. The term ''service technician'' does not include people who use_____ , sanitizers or disinfectants; or who otherwise apply ready to use consumer products pesticides.
A. Structural pest control or lawn pest control
B. Antimicrobial pesticides
C. Biochemical pesticide(s)
D. None of the above

5. _____ are used as disinfectants in medical settings, where they are present in products used in cleaning cabinets, floors, walls, toilets, and other surfaces.
A. Chitin synthesis inhibitor(s)
B. Microbial pesticide(s)
C. Antimicrobial public health pesticides
D. None of the above

6. Proper utilization of these _____is an important part of infection control activities employed by hospitals and other medical establishments.
A. Disinfectants
B. Microbial pesticide(s)
C. Biochemical pesticide(s)
D. None of the above

7. _____ are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals.
A. Insect growth regulator (IGR)
B. Microbial pesticide(s)
C. Biopesticides
D. None of the above

8. _____ consist of a microorganism as the active ingredient. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pest[s].
A. Chitin synthesis inhibitor(s)
B. Microbial pesticide(s)
C. Biochemical pesticide(s)
D. None of the above

9. _____ are pesticidal substances that plants produce from genetic material that has been added to the plant.
A. Insect growth regulator (IGR)
B. Microbial pesticide(s)
C. Plant-Incorporated-Protectants (PIPs)
D. None of the above

10. _____ are naturally occurring substances that control pests by non-toxic mechanisms. Conventional pesticides, by contrast, are generally synthetic materials that directly kill or inactivate the pest.
A. Chitin synthesis inhibitor(s)
B. Plant-Incorporated-Protectants (PIPs)
C. Biochemical pesticide(s)
D. None of the above

11. _____ include substances, such as insect sex pheromones that interfere with mating as well as various scented plant extracts that attract insect pests to traps.
A. Chitin synthesis inhibitor(s)
B. Insect growth regulator (IGR)
C. Biochemical pesticide(s)
D. None of the above

12. _____ is a synthetic chemical that mimics insect hormones. Hormones regulate a wide array of body and growth (physiological) functions.
A. Insect growth regulator (IGR)
B. Microbial pesticide(s)
C. Antimicrobial pesticides
D. None of the above

13. _____ may hinder molting, pupal emergence, or body wall formation.
A. Chitin synthesis inhibitor(s)
B. IGR
C. Biochemical pesticide(s)
D. None of the above

14. _____are often specific for an insect species or a group of very closely related species. They often have delayed effects because they are taken into the insect and stored until the insect reaches the right growth stage. This may range from days to weeks or even months.
A. IGR
B. Microbial pesticide(s)
C. Antimicrobial pesticides
D. None of the above

15. _____ can also kill eggs by disrupting normal embryonic development.
A. Biochemical pesticide(s)
B. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
D. None of the above

16. _____ affect insects for longer periods of time than hormonal IGRs. These are also quicker acting but can affect predaceous insects, arthropods and even fish.
A. Insect growth regulator (IGR) C. Chitin synthesis inhibitor(s)
B. Microbial pesticide(s) D. None of the above

17. _____ is an insect growth regulator that interferes with insects' chitin synthesis.
A. Methoprene C. Diflubenzuron
B. Hexaflumuron D. None of the above

18. _____ is not approved for use in indoor residences.
A. Nylar C. Hexaflumuron
B. Pyriproxyfen D. None of the above

19. _____ is an insecticide of the benzamide class. It is used in forest management and on field crops to selectively control insect pests.
A. Methoprene C. Diflubenzuron
B. Nylar D. None of the above

20. _____ is used primarily on cattle, citrus, cotton, mushrooms, ornamentals, standing water, forestry trees and in programs to control mosquito larvae and gypsy moth populations. Formulations include a soluble concentrate, flowable concentrate, wettable powder and a pelleted/tableted.
A. Diflubenzuron C. Nylar
B. Pyriproxyfen D. None of the above

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Topic 2 - EPA Requirement Training Section

Decontamination Supplies and Requirements
1. 2 part question- Workers, handlers and early-entry workers must have adequate water for routine washing, soap and sufficient paper towels. Where there is no running water, early-entry workers and handlers must have at least _____ gallons of water for one employee and _____ gallons of water for two or more employees. The water must be of a “quality and temperature” that will not cause illness or injury.
A. 1- 10 C. 10-20
B. 5-25 D. None of the Above

Agricultural Employers Responsibility
2. _____must be trained on pesticide safety before they begin working at your grow operation.
A. Handler(s) C. All workers and handlers
B. Agricultural Employer(s) D. None of the Above

Which Pesticides Uses are Covered?

3. Most pesticide uses involved in the production of agricultural plants on a farm, forest, nursery, or greenhouse are covered by the WPS. This includes pesticides used on plants, and pesticides used on the soil or planting medium the plants are (or will be) grown in. Both general-use and restricted-use pesticides are covered by the_____ .

A. Labeling C. WPS
B. Training D. None of the Above

4. Handlers must have a clean change of clothes -- such as _____ -- to put on in case their clothes become contaminated.

A. Coveralls C. Normal Clothes
B. Bloomers D. None of the Above

5. Handlers and early-entry workers must also carry _____ of water with them (or it must be "immediately" nearby on their vehicle) for emergency eyeflushing when the pesticide label requires protective eyewear (goggles or faceshield).

A. A pint C. 2 pints
B. A gallon D. None of the Above

6. All permanent mixing/loading sites regardless of whether or not the label requires_____.

A. Protective eyewear C. Permanent decontamination station(s)
B. Emergency eyewash D. None of the Above

WPS Requires Providing Decontamination Sites

7. A decontamination site must be within a _____ mile of the employees' work site.

A. 1/10 C. 1/2
B. 1/4 D. None of the Above

8. Decontamination supplies, however, need **not** be provided to _____ workers.

A. Contact early-entry C. No-contact early-entry
B. Short-term early-entry D. None of the Above

Decontamination Supply Requirements

9. Employers must make sure to provide handlers with decontamination supplies for _____and pesticide residues while they are performing handling tasks and to workers who are in a pesticide-treated area and are performing tasks that involve contact with anything that has been treated with pesticides, including soil, water, or plant surfaces.

A. Washing off pesticides C. Mix, load, or apply agricultural pesticide(s)
B. Work D. None of the Above

Worker Decontamination Supplies

10. Supplies must be located within ¼ mile of the work area if a WPS-labeled pesticide has been used within _____ days, except in those cases where low-risk pesticides (those with REIs of four hours or less) are used.

A. 72 C. 30
B. 4 D. None of the Above

Handler Decontamination Supplies

11. Supplies must be provided at the mixing site and within ¼ mile of the application area. Supplies may be in the application area if protected from drift and spray residues. Supplies must include the following: Water—a minimum of _____gallons per handler or a potable source of tap water

A. 5 C. 3
B. 10 D. None of the Above

12. _____ if the pesticides used require protective eyewear as stated on the label; potable water may be used as eyewash

A. Decontamination site C. All permanent mixing/loading sites
B. Emergency eyewash D. None of the Above

Emergency Information

13. Provide to the worker or handler or to treating medical personnel, promptly upon emergency vehicle, request, any obtainable information on: product name, EPA registration number, and active ingredients for any product(s) to which the person may have been exposed, antidote, first aid, _____and other medical or emergency information from the product labeling, description of the way the pesticide was being used, circumstances of the worker's or handler's exposure to the pesticide.

A. Emergency assistance C. Requirements in the standard
B. Statement of practical treatment D. None of the Above

14. If there is reason to believe that a worker has been poisoned or injured by pesticides, the employer must make prompt transportation to a medical facility available to the worker. On request the employer must provide, to either the worker or medical personnel providing treatment, information about the product including the EPA registration number, active ingredients in any product the worker might have been exposed to in the past _____ days, antidote and other first aid information from the product labeling, and information about the application and the exposure of workers to the pesticide.

A. 30 C. 7
B. 45 D. None of the Above

Restrictions During Application

15. The handler employer must assure that: No pesticide is applied so as to contact any worker (directly or through _____) other than an appropriately trained and equipped handler.

A. Drift C. Dusts
B. Droplets D. None of the Above

Oral Warnings to Workers

16. Oral warnings must include the the time during which entry is restricted.

A. True B. False

17. Oral warnings must include the instructions not to enter the treated area until the restricted-entry interval has expired.

A. True B. False

Communication:

18. Provide oral warnings to workers in a manner that they can understand.

A. True B. False

19. Workers who are on your establishment at the start of an application must be orally warned **before the application takes place**.
A. True B. False

20. Workers who are **not** on your establishment at the start of an application must be orally warned **at the beginning of their first work period** if (1) the application is still taking place or (2) the restricted-entry interval for the pesticide is in effect.
A. True B. False

Topic 3- Bees and Related Bee Like Insects

Mason Bee
1. Smaller than a honeybee, mason bees resemble _____more than Honeybees.
A. Bumble bees C. Flies
B. Mosquitoes D. None of the above

2. Mason bees are native to _____.
A. North America C. Europe
B. South America D. None of the above

Orchid Bee Not to be confused with Orchard Bee
3. Male orchid bees have uniquely modified legs which are used to collect and store different volatile compounds throughout their lives, primarily from orchids in the sub-tribes Stanhopeinae and Catasetinae, where all species are exclusively pollinated by_____.
A. Ergonime males C. Females
B. Euglossine males D. None of the above

4. The male Eufriesea purpurata is highly unusual in actively collecting the _____in huge amounts from houses in Brazil, without suffering any harm from it.
A. Insecticide DDT C. Toxic dust
B. Pollen D. None of the above

Identifying characteristics for the family Halictidae include:
5. All bees are covered with hair, to which pollen sticks when flowers are visited; most female bees have apparatus for gathering this pollen; it is combed into a special basket or brush located on the hind legs.
A. True B. False

Cuckoo Bee
6. Look for cuckoo bees flying low over the ground and foliage, hunting for foraging and nesting potential victims.
A. True B. False

7. Many cuckoo bees are closely related to their hosts, and may bear similarities in appearance reflecting this relationship. This common pattern gave rise to the ecological principle known as "_____".
A. Price's law C. Johnson standard
B. Emery's Rule D. None of the above

Queen Bumble Bee

8. The queen bumble bee comes out of hibernation every _____to find a new spot to build her nest and start a new colony.

A. Spring C. Summer
B. Full moon D. None of the above

9. The queen bee is fertilized the previous season and has managed to live through the winter months. The same nesting spots from previous seasons are rarely used.

A. True B. False

10. A suitable place for nesting is usually on the ground, beneath a flat object. An old mouse hole or similar hole in the ground is preferred if it is underneath an old tarp, flat stone or man-made objects such as a deck. The hole chosen by the queen bee is first padded by pieces of vegetation such as dry grass or moss.

A. True B. False

Topic 4- Mosquito Section

Integrated Pest Management -Introduction

1. IPM relies heavily on resident education and _____.

A. Pests and vectors C. Pest monitoring
B. Pest prevention D. None of the above

2. _____ is an important component to any successful IPM program because the results from the surveillance will help determine the appropriate response to an infestation.

A. Surveillance C. Lower levels of infestations
B. Pest prevention D. None of the above

3. IPM is a science-based and common-sense approach for_____, vectors, such as mosquitoes.

A. Managing pests C. Pest monitoring
B. Surveillance D. None of the above

4. Once mosquitoes have landed, they rely on _____to determine if we are an acceptable blood meal host.

A. Transient waters C. A number of short-range attractants
B. Torpor D. None of the above

5. Mosquitoes that hibernate in the adult stage live for 6-8 months, but spend most of that time in a_____.

A. Its life cycle C. State of torpor
B. Cocoon D. None of the above

6. Aedes adults will oviposit near the edge of the swamp or within tussocks of vegetation, requiring later flooding to _____.

A. Begin its life cycle C. Inundate the eggs for hatching
B. Look for a blood meal D. None of the above

Mosquito Life Cycle Section

7. The type of standing water in which the mosquito chooses to lay her _____depends upon the species.

A. Nest C. Eggs
B. Raft D. None of the above

8. Sections of marshes, swamps, clogged ditches, and temporary pools and puddles are all prolific mosquito breeding sites. Other locations in which some species lay their _____ include tree holes and containers such as old tires, buckets, toys, potted plant trays, and saucers and plastic covers or tarpaulins.

A. Nest C. Eggs
B. Raft D. None of the above

9. The mosquito goes through three distinct stages during its life cycle.

A. TRUE B. FALSE

Wrigglers and Tumblers

10. After the female mosquito obtains a blood meal, she lays her eggs directly on the surface of stagnant water, in a depression, or on the edge of a container where rainwater may collect and flood the eggs.

A. TRUE B. FALSE

11. The larva lives in the water, feeds, and develops into the third stage of the life cycle called a pupa or "_____".

A. Ergatoids C. Wrigglers
B. Tumbler D. None of the above

12. Mosquitoes may overwinter as eggs or,_____.

A. Fertilized adult females or larvae C. Wriggler
B. Ergatoids D. None of the above

13. Mosquitoes belonging to the genus Culex lay their _____ in bunches or "rafts."

A. Tumblers C. Eggs
B. Cocoons D. None of the above

Weather

14. Mosquito development and population dynamics are closely tied to weather. When and how much rain is received, wind speed and direction, maximum and minimum temperatures, and the total amount of heat energy accumulated are all critical to mosquito development.

A. TRUE B. FALSE

Water Source

15. The water (or lack thereof) in a habitat directly does not affects mosquito reproduction. Very few mosquitoes need standing water to complete their development.

A. TRUE B. FALSE

16. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.

A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

17. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

18. Culex pipiens can be found in a fairly limited range of larval habitats, but are generally associated with water that has a low organic content.
A. TRUE B. FALSE

19. Culex pipiens' main host is wild donkeys, but it also feeds freely on a wide variety of warm-blooded vertebrates, including birds.
A. TRUE B. FALSE

20. Culex pipiens is a serious pest, called the "house mosquito" because it commonly develops in small containers around the home. It shows great skill in finding ways to get into the house, where it feeds on_____.
A. Birds C. Effluent from sewage treatment plants
B. The occupants at night D. None of the above

Topic 5- Mosquito Identification Section

1. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.
A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

2. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.
A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

3. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.
A. Out-of-doors at night C. Northern half
B. Southern parts D. None of the above

4. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.
A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

5. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

6. Malaria was a serious plague in the United States for centuries until its final eradication in the 1950s. Despite the ostensible eradication, there are occasional cases of autochthonous (local) transmission in the U.S. vectored by An. quadrimaculatus in the east and Anopheles freeborni in the west.
A. True B. False

7. Culex pipiens can be found in a fairly limited range of larval habitats, but are generally associated with water that has a low organic content.
A. True B. False

8. Culex pipiens' main host is wild donkeys, but it also feeds freely on a wide variety of warm-blooded vertebrates, including birds.
A. True B. False

9. Culex pipiens is a serious pest, called the "house mosquito" because it commonly develops in small containers around the home. It shows great skill in finding ways to get into the house, where it feeds on_____.
A. Birds C. Effluent from sewage treatment plants
B. The occupants at night D. None of the above

10. Culex tarsalis breeds in nearly every freshwater source except _____. Larvae are found in all but the most polluted ground pools.
A. Treeholes C. Effluent from sewage treatment plants
B. Ground water D. None of the above

11. Culex tarsalis is the most important carrier of _____ in much of the western U.S.
A. WEE C. Western equine and Saint Louis encephalitis
B. Malaria D. None of the above

12. As mosquitoes go, the Western Encephalitis Mosquito is one of the more easily recognizable, with its _____.
A. Distinctive scale patterns C. High pitched scream
B. Distinct ring around the proboscis D. None of the above

13. Species in the genus Culex are known as “snowpool” mosquitoes.
A. True B. False

14. Woodland Malaria mosquitoes have four life stages: egg, larva, pupa, and adult. The immature stages need standing water to complete their life cycle.
A. True B. False

Effective Mosquito-Control Program
15. Initial surveys identify the species of mosquitoes present and provide general information on locations, densities and disease potential. With this knowledge it may be possible to determine life cycles and feeding preferences; predict larval habitats, adult resting places and flight ranges; and perhaps even make preliminary recommendations for control programs.
A. True B. False

Topic 6- Wood Destroyers- Termite Section

Feeding Habits

1. Termites have distinct protozoa in their intestine that provide enzymes to digest _____.

A. Moisture
B. Cellulose(s)
C. Wood
D. None of the above

2. Termites feed primarily upon wood and wood products containing _____.

A. Moisture
B. Cellulose(s)
C. Fungi
D. None of the above

Below Ground Termite Colonies

3. The colony may be up to _____ deep in the ground. The ground serves as a protection against extreme temperatures and provides a moisture reservoir.

A. 18-20 inches
B. 8-12 feet
C. 18-20 feet
D. None of the above

4. Termites obtain wood or _____ above ground by constructing and traveling through earthen (mud) tubes?

A. Nest
B. Cellulose materials
C. Mud
D. None of the above

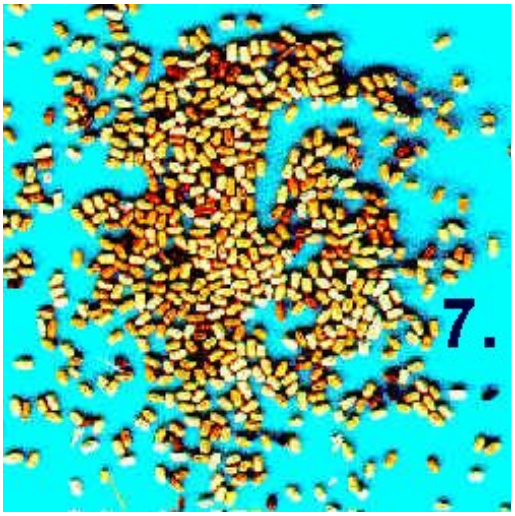
5. These are _____?

A. Soldiers
B. Workers
C. Swarmers
D. None of the above

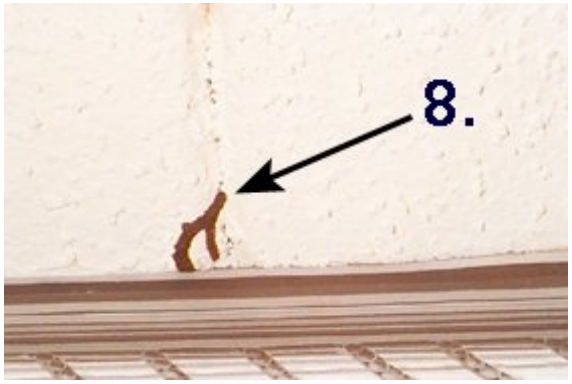
6. These are?
A. Workers
B. Frass
C. Alates
D. None of the above

7. These are?
A. Mud Holes
B. Frass
C. Eggs
D. None of the above

8. This is ?
A. Mud Tube
B. Castle
C. Entry
D. None of the above



9. This is ?
A. Mud Tubes
B. Erosion
C. Exits
D. None of the above



Termite Identification Section

10. Which of the following do not need a connection to soil and there is no soil in their feeding galleries? They do not build mud tunnels; they construct large, irregular galleries that run across and with the wood grain, with a very smooth, clean, and sandpaper-like appearance.

A. Formosan termite(s)
B. Drywood termite(s)
C. Western subterranean termite(s) or Subterranean
D. None of the above

11. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.

A. Boron
B. Fipronil
C. Chlorfenapyr
D. None of the above

12. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.

A. Termidor®
B. Permethrin
C. Boron
D. None of the above

13. Which of the following is registered as a termiticide under the tradename Phantom®?

A. Termidor®
B. Fipronil
C. Chlorfenapyr
D. None of the above

Termite Product Applications

14. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.

A. 5 & 20
B. 4 & 10
C. 2 & 5
D. None of the above

15. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.

A. 1 to 1 1/2
B. .5 to 1
C. 1 to 2
D. None of the above

Crawl Spaces

16. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.

A. 18 inches
B. 24 inches
C. 6 inches
D. None of the above

17. Do not treat soil in _____ with a broadcast insecticide spray.

A. Insecticide barrier
B. Crawl space area
C. Interior vertical barrier
D. None of the above

Hollow Masonry Units of the Foundation Walls

18. Treat through masonry voids to provide a _____ at the top of the footing.

A. Insecticide barrier
B. Continuous chemical barrier
C. Spray barrier
D. None of the above

19. When treatment is necessary, access holes must be drilled through mortar joints below the_____, as close as possible to the footing.
A. Insecticide barrier C. Interior vertical barrier
B. Sill plate D. None of the above

20. Removing the tubes provides a way to determine if a termite infestation remains _____after treatment or if the termites reappear in the same area later.
A. Active C. Complete termite treatment
B. Dormant D. None of the above

Topic 7- Termite and Wood Destroyer Management Section

1. Which of the following is a broad-spectrum pyrethroid insecticide. It is available in dusts, emulsifiable concentrates, smokes, ULV concentrates, and wettable-powder formulations?
A. Termidor® C. Chlorfenapyr
B. Permethrin D. None of the above

2. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

3. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.
A. Termidor® C. Boron
B. Permethrin D. None of the above

4. Which of the following is registered as a termiticide under the tradename Phantom®?
A. Termidor® C. Chlorfenapyr
B. Fipronil D. None of the above

5. Which of the following acts on the mitochondria of cells and uncouples or inhibits oxidative phosphorylation, preventing the formation of the crucial energy molecule adenosine triphosphate (ATP)? As a result, energy production in the cells shuts down, resulting in cellular and, ultimately, termite death?
A. Chlorfenapyr C. Fipronil
B. Permethrin D. None of the above

6. Which of the following works by blocking the gamma-aminobutyric acid (GABA) regulated chloride channel in neurons, thus disrupting the activity of the insect's central nervous system?
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

Termite Product Applications

7. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.

A. 5 & 20 C. 2 & 5
B. 4 & 10 D. None of the above

8. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.

A. 1 to 1 1/2 C. 1 to 2
B. .5 to 1 D. None of the above

Crawl Spaces

9. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.

A. 18 inches C. 6 inches
B. 24 inches D. None of the above

10. Do not treat soil in _____ with a broadcast insecticide spray.

A. Insecticide barrier C. Interior vertical barrier
B. Crawl space area D. None of the above

Hollow Masonry Units of the Foundation Walls

11. Treat through masonry voids to provide a _____ at the top of the footing.

A. Insecticide barrier C. Spray barrier
B. Continuous chemical barrier D. None of the above

12. When treatment is necessary, access holes must be drilled through mortar joints below the_____, as close as possible to the footing.

A. Insecticide barrier C. Interior vertical barrier
B. Sill plate D. None of the above

13. State regulations require pest control operators to remove termite tubes as part of a lifetime protection.

A. TRUE B. FALSE

14. Removing the tubes provides a way to determine if a termite infestation remains _____after treatment or if the termites reappear in the same area later.

A. Active C. Complete termite treatment
B. Dormant D. None of the above

15. Control products containing inorganic borate can be applied to lumber at the time of construction, or later if exposed, to provide lifetime protection from infestation as long as the wood remains dry.

A. TRUE B. FALSE

Topic 8- Wood Borers- Beetles Section

1. The adult insect becomes a large grey moth.
A. Carpenter worm adult
B. Pine sawyer moth
C. Poplar moth larva
D. None of the above

2. This insect bores in trees as larvae. The adults resemble wasps in many cases.
A. Clear-winged moth
B. Pine sawyer adult
C. Locust borer adult
D. None of the above

3. This insect's life cycle is spent as the larva in the tree. They feed for a period of from 2-4 years and bore in the heartwood and sapwood. Infested trees can be weakened and break. A related species, causes galls on smaller limbs of poplars and aspens.
A. Carpenter ant
B. Clear-winged larva
C. Poplar borer larva
D. None of the above

4. This insect is a large caterpillars that grow to almost three inches long. They mine the heart wood of trees. They attack poplars and cottonwoods and can attack many other trees as well.
A. Bark beetle adults
B. Carpenter worm
C. Shot-hole borer
D. None of the above

5. This insect can extensively mine limbs of susceptible trees. Poplars, willow, and cottonwood trees are hosts of several species.
A. Poplar borer
B. Ants
C. Clear-winged moth larva
D. None of the above

6. This insect attacks black locust trees. The strikingly colored adults emerge in the fall and can be seen feeding on goldenrod.
A. Carpenter bees
B. Pine sawyer larva
C. Locust borer adult
D. None of the above

7. This insect is a pest because it mines in the ends of the new twigs of fruit trees and ornamental fruit trees. The new twigs start to grow and then wilt because these larvae are tunneling down the center of them. Adults are small grey moths.
A. Black moth
B. Woody moth
C. Peach twig borer larva
D. None of the above

8. This insect commonly infests ash. The larvae look like those of the locust borer only smaller. It will attack elm, linden, redbud, and oak as well as ash trees.
A. Bronze birch borer larva
B. Red headed ash borer adult
C. Poplar and willow borer larva
D. None of the above

9. This insect attacks pine trees and are usually found around homes as a result of being brought in with firewood. They seldom attack pine trees in residential plantings.
A. California laurel borer adult
B. Red headed ash borer adult
C. Pine sawyer adult
D. None of the above

10. This striking insect, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. Bronze birch borer adult C. Poplar and willow borer larva
B. Red headed ash borer adult D. None of the above

11. Paper birches are frequently attacked by this insect. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the California laurel borer.
A. Bark Beetle C. Pine sawyer adult
B. Bronze birch borer adult D. None of the above

12. The larvae mine the sapwood. Swollen areas on limbs show where the larvae feed and frass can be seen being forced out of holes in the bark as the larva feeds.
A. California laurel borer larva C. Poplar and willow borer larva
B. Red headed ash borer larva D. None of the above

13. Although not true borers, this insect attacks several evergreen trees. The adults usually emerge in mid-summer and lay eggs.
A. Bark beetle adults C. Shot-hole borer
B. Poplar borer D. None of the above

14. This insect attacks weakened or dead trees and shrubs. They feed deeper in the wood than bark beetles. The larvae are legless grubs.
A. Bark beetle adults C. Shot-hole borer
B. Carpenter bee D. None of the above

15. There are many bark beetle genera, of which the most important with respect to forest damage are Dendroctanus, Pitch, and Acolytes.
A. TRUE B. FALSE

16. Adult bark beetles bore through the inner cambial to the outer bark layer, where they channel in galleries in which to lay eggs.
A. TRUE B. FALSE

17. Pine bark beetles in Arizona are generally of the genus Ips or Dendroctonus. However, several other genera also attack pine, including: Hylastes, Hylurgops, and Pityogenes.
A. TRUE B. FALSE

18. Often several species will attack at the same time. Identification of specific beetle species can be difficult. Identification can be aided by knowing the host species attacked, time of year, and the design of the galleries (tunnels) created by the adults and larvae.
A. TRUE B. FALSE

19. Often, numerous small pitch tubes (globules of pitch ³.. to 1 ¹.." diameter) appear on the trunk of infested trees. The pitch tubes generally have a creamy appearance, much like crystallized honey.
A. TRUE B. FALSE

20. Dust caused by boring in the bark crevices and at the tree base is another sign of termites.
A. TRUE B. FALSE

Topic 9- Arachnid Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern

Spider Reproduction

1. All species of spiders have two separate sexes, and the males are usually larger than the females.

A. True B. False

2. _____ includes spiders and scorpions, mites and ticks, horseshoe crabs, daddy-longlegs, and extinct "sea-scorpions", to name a few.

A. The Chelicerata C. The Nematodes
B. The Chaetognatha D. None of the above

Spider Introduction

3. The spider then liquefies the tissues of the prey with a digestive fluid and sucks this broth into its_____, where it may be stored in a digestive gland.

A. Digestive gland C. Stomach
B. Cephalothorax D. None of the above

Spider's Life
Biology

4. The _____is strong and stiff, while the cuticle of the abdomen is soft and extensible.

A. Chelicerae cuticle C. Cephalothorax cuticle
B. Pedipalp cuticle D. None of the above

Spider Reproduction

5. All species of spiders have two separate sexes, and the males are usually larger than the females.

A. True B. False

6. A sexually mature male spider uses its pedipalp cuticle to transfer sperm cells into the female during mating. In this process, the male builds a sperm tower, onto which he deposits a drop of sperm from his abdomen.

A. True B. False

Types of Spider Webs

7. Web patterns vary considerably, depending on the species of spider. Perhaps the most recognizable web is the_____, in which an outer framework supports a continuous spiraling thread and a series of threads radiating from the center of the web.

A. Horizontal silk sheet with a dome C. Almost circular orb web
B. A tight or wide mesh web D. None of the above

Web Building

8. Spiders that weave orb webs generally begin by spinning a thread that is carried by _____ until it catches on a tree limb or other firm support. From this thread, the spider lays down another thread to form _____ that is the basic framework of the web.

A. Silk glands or glands - W-shaped structure
B. Air currents - Y-shaped structure
C. A raised tube in the corner – X -shaped structure
D. None of the above

Constructing an Orb Web

9. After having made the web, the spider will wait on or near the web for its prey to fall victim to its sticky trap.

A. True B. False

Spider Web Uses

10. Some species of spiders do not use their webs for catching prey directly, some spiders pounce from hiding such as trapdoor spiders, or some chase down their prey such as the wolf spider.

A. True B. False

Topic 10- Spider Identification Section

Two Primary Spider Groups

1. _____construct webs in rather quiet, undisturbed places to capture their food. They live in or near their web and wait for food to come to them. They generally have poor eyesight and rely on sensing vibrations in their web to detect prey.

A. Hobo spider(s) C. Pirate spider(s)
B. Web-building spiders D. None of the above

Jumping Spiders

2. Jumping spiders are generally small to medium-sized (about 1/5 - 1/2 inch long) and compact-looking. They are usually _____ with _____, although some can be brightly colored, including some with iridescent mouthparts.

A. Dark-colored – White markings C. White-colored – Black markings
B. Light colored – Dark markings D. None of the above

Ground Spiders

Crab Spider

3. Small crab spiders are dark or tan; some are lightly colored orange, yellow or creamy white. Their legs extend out from their sides causing them to scuttle back and forth in a crab-like fashion. These spiders hide in flower blossoms and may be brought inside in cut flowers.

A. True B. False

Brown Recluse Spider

4. The most definitive physical feature of recluse spiders is their eyes: most spiders have _____ eyes that typically are arranged in two rows of _____, but recluse spiders have _____equal-sized eyes arranged in three pairs.

A. 6 – 8 -- 3 C. 8 – 4 - 6
B. 3 – 6 - 8 D. None of the above

Cyphophthalmi

5. The Cyphophthalmi are a suborder of harvestmen, with about _____ genera, and more than _____ described species.

A. 100 - 36 C. 50 - 1000
B. 36 - 100 D. None of the above

Mygalomorphae

6. The Mygalomorphae, (also called the Orthognatha), are an infraorder of spiders. The latter name comes from the orientation of the fangs which point straight down and do not cross each other (as opposed to _____).

A. Australasian funnel-web spiders C. Theraphosa blondi
B. Araneomorph D. None of the above

7. Almost all species of Mygalomorphae have _____ eyes, however there are some with fewer (Masteria lewisi has only _____ eyes).

A. 6 – 8 C. 8 - 6
B. 3 - 8 D. None of the above

8. Unlike Araneomorphae, which die after about a year, Mygalomorphae can live for up to _____years, and some don't reach maturity until they are about _____years old. Some flies in the family Acroceridae which are endoparasites of mygalomorphs may remain dormant in the book lungs for as long as _____ years before beginning their development and consuming the spider.

A. 30 – 6 - 25 C. 25 – 6 - 20
B. 10 – 3 - 20 D. None of the above

Solifugae (Sun Spiders or Wind Scorpions)

9. Most Solifugae species live in deserts and feed opportunistically on ground-dwelling arthropods and other animals.

A. True B. False

Vinegarroons

10. The Vinegarroons' acetic acid gives this spray a vinegar-like smell, giving rise to the common name vinegarroon.

A. True B. False

Topic 11- Web Spider Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Orb Weaving Spiders

1. Venom toxicity - the bite of Orb-Weaving Spider is of high risk (toxic) to humans.

A. True B. False

Trap-Door Spiders

2. Venom toxicity - the bite of the Trap-Door Spider is of low risk (non-toxic) to humans. It is a non-aggressive spider - usually timid but may stand up and present its fangs if harassed. Rarely bites - but if so it can be painful.

A. True B. False

House Spider

3. The spider's web forms a tube, and the narrowed end serves as a retreat where the spider can hide. When an insect walks over the _____, the spider immediately rushes out from the funnel, grabs its victim, and delivers a poisonous bite. The spider then carries its prey back to its retreat, where it begins to feed.

A. Sheet web C. Oval web
B. Trap web D. None of the above

Garden Spiders

4. Garden spiders belong to the family Araneidae, a group of _____ different species of spiders that weave orb, or circular, webs.

A. 36 C. 2,500
B. 5,000 D. None of the above

Hobo Spider Information

5. The hobo spider is a member of the funnel-web spider family _____.

A. Solifugae C. Agelenidae
B. Araneomorphae D. None of the above

Spider Bite Section

6. All spiders (except the family _____) have venom glands, but not all are venomous to man. In fact very few species pose a threat to man. Some spider bites might need medical attention even if the species is recognized as not being venomous to man, as secondary infections can occur.

A. Uloboridae C. Agelenidae
B. Araneomorphae D. None of the above

7. Spider venom, like bee venom, is non-fatal.

A. True B. False

8. A patient may also have symptoms from a spider bite such as a red, itchy rash over the torso, arms and legs that is usually seen in the first 24-72 hours. Patients may have pain in the muscles and joints, fever, chills, swollen lymph nodes, headaches, and nausea and vomiting.

A. True B. False

9. Cytotoxic venom affects the cellular tissue**,** usually restricted to the area of the bite, but it can spread. The bite is at first painless, with symptoms developing about 2 to 8 hours after the bite. It starts by resembling a mosquito sting, becoming more painful and swollen. Eventually it ulcerates into a large surface lesion (up to 10 centimeters) that will require medical attention. This type of bite would result from members of the genera _____(family Sicariidae) and _____ (family Miturgidae).

A. Loxosceles - Cheiracanthium C. Mygalomorphae - Loxosceles
B. Loxosceles - Araneomorphae D. None of the above

Jumping Spiders

10. The _____is probably the most common biting spider in the United States. People are caught by surprise and scared when they see the spider jump, especially if it jumps towards them.

A. Brown recluse spider(s) C. Jumping spider(s)
B. Trap-Door Spider(s) D. None of the above

Topic 12- Tick Section

(S) means the answer may be plural or singular in nature. Or means either answer may work. Multiple choice. Please select one answer only per question. No trick questions.

1. More than 800 species of ticks inhabit the planet. They are second only to mosquitoes as vectors of human disease,_____.

A. Including parasitic mechanisms
B. Causing allergic reaction(s)
C. Both infectious and toxic
D. None of the above

2. Ixodidae or Hard Ticks >700 species are distinguished from the Argasidae by the presence of a _____or hard shield.

A. Idiosoma
B. Capitulum (head)
C. Scutum
D. None of the above

Life cycle and reproduction

3. _____ticks undergo three primary stages of development: larval, nymphal, and adult.

A. Only Argasidae or Argasid
B. Only Dermacentor
C. Both ixodid and argasid
D. None of the above

Ixodidae

4. Ixodid ticks require three hosts, and their life cycle takes at least one year to complete. Up to 3,000 eggs are laid on the ground by an adult female tick.

A. 100
B. 500
C. 3,000
D. None of the above

5. All ticks have an incomplete metamorphosis: after hatching from the egg a series of similar stages (instars) develop from a_____, to eight legged nymph and then a sexually developed eight legged adult.

A. Six legged larva
B. Seven instar
C. Eight legged larva
D. None of the above

6. Between each stage there is a molt (ecdysis) which enables the developing tick to expand within a new_____.

A. Idiosoma
B. Haller's organ
C. External skeleton
D. None of the above

7. The family _____ contains the important genera Amblyomma, Dermacentor, Haemaphysalis, Hyalomma, Ixodes, Margaropus, and Rhipicephalus. Also the important boophilid ticks, formerly of the genus Boophilus, are now classified as a sub-genus within the genus Rhipicephalus.

A. Ornithodoros
B. Ixodidae
C. Dermacentor
D. None of the above

8. The cement serves to hold the _____ in place while the tick feeds.

A. Idiosoma
B. Capitulum
C. Mouthparts
D. None of the above

9. _____on larval and nymphal ticks are small with less penetration and produce a smaller host reaction.
A. Idiosoma C. Mouthparts
B. Hypostome D. None of the above

10. Adult Ixodes and _____ticks have long mouthparts that can reach the sub dermal layer of skin, produce a larger reaction, and make the tick harder to remove.
A. Argasidae or Argasid C. Dermacentor
B. Amblyomma D. None of the above

Please complete the entire assignment before submitting the answer key

Topic 13 -Tick Identification Section

Deer Tick Life Cycle

1. The deer tick passes through four life stages (egg, larva, nymph, adult), over a _____
A. Two month period C. Two year period
B. Three month period D. None of the above

Egg to Larvae

2. Eggs are fertilized in the fall and deposited in leaf litter the following_____.
A. Summer C. Spring
B. Month D. None of the above

3. The larvae then drop off their host into the leaf litter where they molt into the next stage, the nymph, remaining dormant until the following _____.
A. Summer C. Spring
B. Month D. None of the above

Larvae to Nymph

4. During the spring and early summer of the next year the nymphs end their dormancy and begin to seek a host. _____ are commonly found on the forest floor in leaf litter and on low lying vegetation.
A. Nymph(s) C. Females
B. Seven instars D. None of the above

Nymph to Adult

5. Over the next few months the nymph molts into the larger adult tick, which emerges in fall, with a peak in October through November. _____find and feed on a host, then the females lay eggs sometime after feeding.
A. Both male and female adults C. Larvae
B. Seven instars D. None of the above

Adult Ticks

6. In the fall of the second year, nymphs molt into adult ticks. Female adults are _____and larger than males.
A. Red or orange C. Black
B. Black and red D. None of the above

7. As female ticks feed over the course of several days, their bodies slowly enlarge with blood (engorge). Adult females infected with disease agents as _____may transmit disease during this feeding.
A. Both male and female adults C. Several nymphal stages
B. Larvae or nymphs D. None of the above

8. _____ticks attach, but do not feed or become engorged. Because the adult males do not take a blood meal, they do not transmit Lyme disease, human anaplasmosis, or babesiosis.
A. Nymph(s) C. The adult female
B. Male D. None of the above

Lone Star Tick Amblyomma americanum
9. Each female produces _____ eggs, which are deposited under leaf and soil litter in middle to late spring.
A. 300-800 C. 3,000-8,000
B. 30,000-80,000 D. None of the above

Winter Tick Dermacentor albipictus
10. _____is found throughout North America. It is widely distributed throughout California, but populations are concentrated around the central coastal and sierra foothill areas. It primarily feeds on horses and deer from fall through early spring. Heavy infestations of horses may cause emaciation and anemia (Furman and Loomis 1984).
A. This two host tick C. This one host tick
B. This no host tick D. None of the above

Topic 14 - Cockroach Section

Introduction
1. There are approximately 4,000 roach species are known worldwide; most cockroaches inhabit the warm tropical regions of the globe.
A. True B. False

2. Cockroaches leave feces as well as emitting airborne pheromones for nesting. These chemical trails transmit bacteria on surfaces.
A. True B. False

3. Roaches can survive without food for up to a month.
A. True B. False

Collective Decision-Making
4. Sociable cockroaches often display _____when choosing food sources.
A. Collective decision-making C. Two pieces of information
B. Pheromones D. None of the Above

Cockroach Life Cycle
5. All roaches have three stages in their life cycle -- egg, nymph (young) and adult. Some have live birth and others lay eggs.
A. True B. False

Reproduction

6. Cockroaches use pheromones to attract mates, and the males practice courtship rituals, such as posturing and _____.

A. Stridulation C. Form of breathing
B. Three stages D. None of the Above

7. Female cockroaches are sometimes seen carrying egg cases on the end of their abdomens; the German cockroach holds about 300 to 400 long, thin eggs in a case called an ootheca.

A. True B. False

Lungs and Breathing

8. Cockroaches, like all insects, breathe through a system of tubes called?

A. Tracheae C. Lungs
B. Ootheca D. None of the Above

9. While cockroaches do not have _____ and thus do not actively breathe in the vertebrate lung manner, in some very large species the body musculature may contract rhythmically to forcibly move air out and in the spiracles; this may be considered a form of breathing.

A. Tracheae C. Lungs
B. Ootheca D. None of the Above

Summary of Most Commonly Found Types of Cockroaches

10. Which roach require warmth, moisture, and food, which is why they are most common in kitchens and bathrooms?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

11. Which roach is shiny black or dark brown, and the adult is about 1-inch long?

A. Oriental Cockroach C. Brownbanded Cockroach
B. German Cockroach D. None of the Above

12. Although the usual habitat for which cockroaches is outdoors, they often appear in homes, especially in wooded settings.

A. Oriental Cockroach C. Wood Cockroaches
B. German Cockroach D. None of the Above

13. Which roach is the largest cockroach commonly found within dwellings, measuring about 1 1/2 inches long when fully grown?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

14. Which roach species is far less common than the German cockroach, but occasionally can be a problem in homes?

A. Brownbanded Cockroach C. Oriental Cockroach
B. American Cockroach D. None of the Above

15. Which roach is by far the most common cockroach infesting homes and buildings?

A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

Topic 15 – Common Cockroach Classifications Section

1. Giant cockroaches or blaberids (family Blaberidae) are the largest cockroach family. Commonly these live intside and people keep these pests as pets. 13 species in 20 genera in North America.
A. True B. False

2. The Blattellidae is a family of the order Blattaria (cockroaches). This family contains many of the smaller common household cockroaches, among others.
A. True B. False

3. The Blattidae is a family of the order Blattaria (cockroaches). It contains several of the least common household cockroaches.
A. True B. False

Scientific Classification
4. Cockroaches make up the order Blattodea, which contains five families.
A. True B. False

5. Which missing cockroach and Blatella germanica, the Asian cockroach, Blatella asahinai, and the brownbanded cockroach, Supella longipalpa, are in the family Blatellidae?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

6. Which males are 18-20 mm (¾") long and have a delicate brown-on-tan pattern on the pronotum. The wings are a mottled tan and longer than the abdomen?
A. Brownbanded Cockroach C. Desert Cockroach
B. American Cockroach D. None of the Above

7. Which females are 12-14 mm (½") long and have a broadly oval, somewhat hump-backed appearance?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

8. Which of the following are a live bearing species that grow to three inches or more?
A. Brownbanded Cockroach C. Death Head Roaches
B. Desert Cockroach D. None of the Above

9. The Field cockroach is very similar in appearance to which cockroach?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

10. Which cockroach is about 5/8 inch long, overall light brown in color with wings that cover the abdomen? The thoracic shield just behind the head (pronotum) is marked with two prominent black stripes.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

11. Which cockroach is similar to the German cockroach in appearance, but it occurs primarily outdoors where it feeds on decaying plant materials. Compared to the German cockroach, it is more active during daylight hours and will be found around lights. They also are known to fly when disturbed.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

12. Which cockroach 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. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

13. Which cockroach is common outdoors, and lives in warm damp shady areas near the ground or any area containing natural debris. It will often seek refuge indoors when a drop in temperature occurs, but is still quite tolerable of cooler weather?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Outside Living
14. Which cockroach is found outdoors, applications of insecticides to foundation plantings, wood piles, mulch, and other infested locations are recommended?
A. Oriental cockroach C. Smokybrown cockroach
B. Brownbanded cockroach D. None of the Above

Chemical Control
15. Perimeter insecticide sprays may aid in the reduction of cockroaches entering homes from the exterior.
A. True B. False

Topic 16 – Cockroach Inspection and Treatment Section

Sanitation Elimination of Food Resources
1. Which roach can remain alive for approximately 2 weeks with no food or water and for 42 days if only water is available?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Elimination of Moisture Resources
2. The single most important factor in determining cockroach survival is availability of?
A. Dark crevices C. Food
B. Water D. None of the Above

3. German cockroaches live less than two weeks when there is no supply of _____even if food is abundant.
A. Dark crevices C. Food
B. Free water D. None of the Above

Dark Locations – Similar to Rodents

4. In addition to food and water, cockroaches need _____in which to rest and breed, and these harborages must be identified during the inspection. Once again, use your knowledge of the target pest to focus your efforts.

A. Dark crevices C. Daytime hiding places
B. Water D. None of the Above

5. German cockroaches prefer dark crevices close to?

A. Dark crevices C. Food
B. Moisture D. None of the Above

6. Cockroaches prefer bare wooden surfaces, cardboard or paper because these surfaces are easier to climb and because porous surfaces retain their?

A. Aggregation pheromone C. Food
B. Water D. None of the Above

IPM Methods for Cockroaches (Types of Pest Control)

7. IPM programs use current, comprehensive information on the life cycles of pests and their

A. Pest management evaluations C. Judicious use of pesticides
B. Interaction with the environment D. None of the Above

8. IPM takes advantage of all appropriate _____ including, but not limited to, the judicious use of pesticides.

A. Entry and establishment C. Pest management options
B. Target of many insecticides D. None of the Above

9. IPM is not a _____but, rather, a series of pest management evaluations, decisions and controls. In practicing IPM, growers who are aware of the potential for pest infestation follow a four-tiered approach.

A. Pest management evaluations C. Single pest control method
B. Interaction with the environment D. None of the Above

Summary

Prevention

10. Entry and establishment of roach colonies can be prevented by _____of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.

A. Close inspection C. Pest management options
B. Target of many insecticides D. None of the Above

Sanitation

11. Good housekeeping is the _____in preventing and controlling cockroach populations. Cockroaches cannot live without food, water and shelter. Do not allow food particles to remain on shelves or floors.

A. Pest management evaluations C. Judicious use of pesticides
B. Most important factor D. None of the Above

Keys for Cockroach Control and/or Elimination
Chemical Control

12. Cockroaches have been the target of many insecticides over the years but they have _____to several of them.

A. Entry and establishment
B. Target of many insecticides
C. Developed resistance
D. None of the Above

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

A. True B. False

Residual Sprays - Introduction

14. Residual sprays are generally easy and fast to apply.

A. True B. False

15. These formulations are oil-based or water-based emulsions and water-based suspensions (wettable powders).

A. True B. False

Topic 17 - Pesticide Applicator Section

1. _____containers removes a potential source of pesticide exposure to people, animals, and wildlife.

A. Rinsate
B. Rinsing
C. Potential source of pesticide exposure
D. None of the above

2. _____ is required by federal and state regulations and is a good, sound agricultural and environmental practice.

A. Rinsing
B. Pesticide containers
C. Proper rinsing
D. None of the above

3. Rinsate from the containers, when added directly into the_____, efficiently and economically uses all pesticide in the container. This eliminates the need to store and later dispose of the rinsate.

A. Sprayer tank
B. Ground water
C. Potential source of pesticide exposure
D. None of the above

4. Unless rinsed from the container immediately, _____ will solidify and become difficult to remove.

A. Contamination
B. Rinsing
C. Some pesticides
D. None of the above

Rinsing Helps Protect the Environment

5. _____reduces a potential source of contamination of soil, surface, and ground water.

A. Potential source of pesticide exposure
B. Pesticide container recycling
C. Proper rinsing of pesticide containers
D. None of the above

6. When contamination occurs, plants and animals may be harmed and water supplies affected. Prevention of environmental contamination is always better than cleanup. _____also helps in reducing the problem of handling pesticide wastes.
A. Contamination C. Rinsing
B. Pesticide containers D. None of the above

7. No matter how an empty pesticide container is disposed of**,** it must be properly_____ .
A. Rinsate C Rinsed and triple punched
B. Disposed in the trash D. None of the above

8. Both federal and state laws require rinsing. Landfill operators and recyclers can only accept_____.
A. Contamination C. Pesticide containers
B. Properly rinsed containers D. None of the above

9. Pesticide containers should only be offered to recycling projects designed for pesticide containers and not general plastic and metal recycling programs.
A. TRUE B. FALSE

Federal Pesticide Recordkeeping Requirements
10. OSHA currently requires certified commercial applicators to keep records under regulations implementing the Federal Insecticide, Fungicide, and Rodenticide Act (**FIFRA**).
A. TRUE B. FALSE

The recordkeeping requirements are:
11. The brand or product name, and the _____ of the restricted use pesticide that was applied;
A. Location of the application C. Spot application(s)
B. EPA registration number D. None of the above

12. The total amount of the _____ applied;
A. Location of the application C. Spot application(s)
B. Restricted use pesticide D. None of the above

13. The location of the application, the_____ , and the crop, commodity, stored product, or site to which a restricted use pesticide was applied;
A. Size of area treated C. Restricted use pesticide
B. EPA registration number D. None of the above

14. The name and certification number (if applicable) of the certified applicator who applied or who supervised the application of the _____.
A. Restricted use pesticide C. Record(s)
B. Spray D. None of the above

15. The _____ include wearing a double layer of clothing. This can be accomplished by wearing coveralls over the long pants and longsleeve shirt, and rubber boots over the shoes and socks.
A. EPA’S requirements C. EPA's recommendation(s)
B. OSHA’s recommendations D. None of the above

16. The use of gloves is _____ when working with highly toxic pesticides. It is recommended that only unlined rubber or neoprene (nitrile, etc.) gloves be used when handling or using all pesticides. Unlined gloves should be thoroughly washed (inside and outside) after each use.

A. Mandatory
B. OSHA's recommendations
C. EPA'S requirements
D. None of the above

17. Gloves should be at least _____ inches long to provide adequate protection for wrists and the cuffs should be inside sleeves for most work.

A. 6
B. 8
C. 12
D. None of the above

Goggles and Face Shields

18. It is necessary to wear splash-proof goggles when working with pesticides. Not only can the pesticide be absorbed through the eyes but the _____ can cause permanent eye injuries also.

A. EPA's recommendation(s)
B. Acidity of a pesticide
C. Mixing or applying pesticides
D. None of the above

19. Use goggles meeting or exceeding _____ estimate. When pouring or mixing concentrates it is preferable to use a full-face shield to protect the face from splashes. Always wash the goggles or face shield with soap and water after use.

A. ANSI standard Z87.1, 1968
B. Guidance
C. EPA's recommendation(s)
D. None of the above

20. Cloth or leather boots will absorb pesticides and allow the pesticide to contact the skin of the leg or foot and will be a source of residues causing _____.

A. Chronic exposure
B. Guidance
C. Acute exposure
D. None of the above

California DPR Requirement

The Assignment must be submitted to TLC by December 27 in order to be submitted to DPR by the 30th. If it is late, you will be penalized $50 per day.

Advanced Pest Control Assignment – Alternative Assignment

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 80%. 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.

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.

Topic 1- Pesticide Section

1. _____, without certain microorganisms, are exempted from regulation by the EPA. (Biological control agents include beneficial predators such as birds or ladybugs that eat insect pests.)
A. Biochemical pesticide(s) C. Insect growth regulator (IGR)
B. Biological control agent(s) D. None of the above

2. ''Service technician'' does not include people who use_____ , sanitizers or disinfectants; or who otherwise apply ready to use consumer products pesticides.
A. Structural pest control or lawn pest control C. Biochemical pesticide(s)
B. Antimicrobial pesticides D. None of the above

3. _____ are used as disinfectants in medical settings, where they are present in products used in cleaning cabinets, floors, walls, toilets, and other surfaces.
A. Chitin synthesis inhibitor(s) C. Antimicrobial public health pesticides
B. Microbial pesticide(s) D. None of the above

4. Proper use of these _____is an important part of infection control activities employed by hospitals and other medical establishments.
A. Disinfectants C. Biochemical pesticide(s)
B. Microbial pesticide(s) D. None of the above

5. _____ are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals.
A. Insect growth regulator (IGR) C. Biopesticides
B. Microbial pesticide(s) D. None of the above

6. _____ consist of a microorganism as the active ingredient. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pest[s].
A. Chitin synthesis inhibitor(s) C. Biochemical pesticide(s)
B. Microbial pesticide(s) D. None of the above

7. _____ are pesticidal substances that plants produce from genetic material that has been added to the plant.
A. Insect growth regulator (IGR)
B. Microbial pesticide(s)
C. Plant-Incorporated-Protectants (PIPs)
D. None of the above

8. _____ are naturally occurring substances that control pests by non-toxic mechanisms. Conventional pesticides, by contrast, are generally synthetic materials that directly kill or inactivate the pest.
A. Chitin synthesis inhibitor(s)
B. Plant-Incorporated-Protectants (PIPs)
C. Biochemical pesticide(s)
D. None of the above

9. _____ include substances, such as insect sex pheromones that interfere with mating as well as various scented plant extracts that attract insect pests to traps.
A. Chitin synthesis inhibitor(s)
B. Insect growth regulator (IGR)
C. Biochemical pesticide(s)
D. None of the above

10. _____ is a synthetic chemical that mimics insect hormones. Hormones regulate a wide array of body and growth (physiological) functions.
A. Insect growth regulator (IGR)
B. Microbial pesticide(s)
C. Antimicrobial pesticides
D. None of the above

11. _____ may hinder molting, pupal emergence, or body wall formation.
A. Chitin synthesis inhibitor(s)
B. IGR
C. Biochemical pesticide(s)
D. None of the above

12. _____are often specific for an insect species or a group of very closely related species. They often have delayed effects because they are taken into the insect and stored until the insect reaches the right growth stage. This may range from days to weeks or even months.
A. IGR
B. Microbial pesticide(s)
C. Antimicrobial pesticides
D. None of the above

13. _____ work by preventing the formation of chitin, a carbohydrate needed to form the insect's exoskeleton. With these inhibitors, an insect grows normally until it molts.
A. Chitin synthesis inhibitor(s)
B. Insect growth regulator (IGR)
C. Biochemical pesticide(s)
D. None of the above

14. The _____ prevent the new exoskeleton from forming properly, causing the insect to die. Death may be quick, or take up to several days depending on the insect.
A. Inhibitor(s)
B. Insect growth regulator (IGR)
C. Biochemical pesticide(s)
D. None of the above

15. _____ can also kill eggs by disrupting normal embryonic development.
A. Biochemical pesticide(s)
B. Chitin synthesis inhibitor(s)
C. Biochemical pesticide(s)
D. None of the above

16. _____ affect insects for longer periods of time than hormonal IGRs. These are also quicker acting but can affect predaceous insects, arthropods and even fish.
A. Insect growth regulator (IGR)
C. Chitin synthesis inhibitor(s)
B. Microbial pesticide(s)
D. None of the above

17. _____ is an insect growth regulator that interferes with insects' chitin synthesis.
A. Methoprene
C. Diflubenzuron
B. Hexaflumuron
D. None of the above

18. _____ is not approved for use in indoor residences.
A. Nylar
C. Hexaflumuron
B. Pyriproxyfen
D. None of the above

19. _____ is an insecticide of the benzamide class. It is used in forest management and on field crops to selectively control insect pests.
A. Methoprene
C. Diflubenzuron
B. Nylar
D. None of the above

20. _____ is used primarily on cattle, citrus, cotton, mushrooms, ornamentals, standing water, forestry trees and in programs to control mosquito larvae and gypsy moth populations. Formulations include a soluble concentrate, flowable concentrate, wettable powder and a pelleted/tableted.
A. Diflubenzuron
C. Nylar
B. Pyriproxyfen
D. None of the above

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Topic 2 - EPA Requirement Training Section

1. Most pesticide uses involved in the production of agricultural plants on a farm, forest, nursery, or greenhouse are covered by the WPS. This includes pesticides used on plants, and pesticides used on the soil or planting medium the plants are (or will be) grown in. Both general-use and restricted-use pesticides are covered by the_____ .
A. Labeling
C. WPS
B. Training
D. None of the Above

2. _____must be trained on pesticide safety before they begin working at your grow operation.
A. Handler(s)
C. All workers and handlers
B. Agricultural Employer(s)
D. None of the Above

Decontamination Supplies and Requirements

3. 2 part question- Workers, handlers and early-entry workers must have adequate water for routine washing, soap and sufficient paper towels. Where there is no running water, early-entry workers and handlers must have at least _____ gallons of water for one employee and _____ gallons of water for two or more employees. The water must be of a "quality and temperature" that will not cause illness or injury.

A. 1- 10 C. 10-20
B. 5-25 D. None of the Above

4. Handlers must have a clean change of clothes -- such as _____ -- to put on in case their clothes become contaminated.

A. Coveralls C. Normal Clothes
B. Bloomers D. None of the Above

5. Handlers and early-entry workers must also carry _____ of water with them (or it must be "immediately" nearby on their vehicle) for emergency eyeflushing when the pesticide label requires protective eyewear (goggles or faceshield).

A. A pint C. 2 pints
B. A gallon D. None of the Above

6. All permanent mixing/loading sites regardless of whether or not the label requires_____.

A. Protective eyewear C. Permanent decontamination station(s)
B. Emergency eyewash D. None of the Above

7. A decontamination site must be within a _____ mile of the employees' work site.

A. 1/10 C. 1/2
B. 1/4 D. None of the Above

8. Decontamination supplies, however, need **not** be provided to _____ workers.

A. Contact early-entry C. No-contact early-entry
B. Short-term early-entry D. None of the Above

9. Employers must make sure to provide handlers with decontamination supplies for _____and pesticide residues while they are performing handling tasks and to workers who are in a pesticide-treated area and are performing tasks that involve contact with anything that has been treated with pesticides, including soil, water, or plant surfaces.

A. Washing off pesticides C. Mix, load, or apply agricultural pesticide(s)
B. Work D. None of the Above

10. Supplies must be located within ¼ mile of the work area if a WPS-labeled pesticide has been used within _____ days, except in those cases where low-risk pesticides (those with REIs of four hours or less) are used.

A. 72 C. 30
B. 4 D. None of the Above

11. Supplies must be provided at the mixing site and within ¼ mile of the application area. Supplies may be in the application area if protected from drift and spray residues. Supplies must include the following: Water—a minimum of _____gallons per handler or a potable source of tap water
A. 5 C. 3
B. 10 D. None of the Above

12. _____ if the pesticides used require protective eyewear as stated on the label; potable water may be used as eyewash
A. Decontamination site C. All permanent mixing/loading sites
B. Emergency eyewash D. None of the Above

Emergency Information
13. Provide to the worker or handler or to treating medical personnel, promptly upon emergency vehicle, request, any obtainable information on: product name, EPA registration number, and active ingredients for any product(s) to which the person may have been exposed, antidote, first aid, _____and other medical or emergency information from the product labeling, description of the way the pesticide was being used, circumstances of the worker's or handler's exposure to the pesticide.
A. Emergency assistance C. Requirements in the standard
B. Statement of practical treatment D. None of the Above

14. If there is reason to believe that a worker has been poisoned or injured by pesticides, the employer must make prompt transportation to a medical facility available to the worker. On request the employer must provide, to either the worker or medical personnel providing treatment, information about the product including the EPA registration number, active ingredients in any product the worker might have been exposed to in the past _____ days, antidote and other first aid information from the product labeling, and information about the application and the exposure of workers to the pesticide.
A. 30 C. 7
B. 45 D. None of the Above

15. The handler employer must assure that: No pesticide is applied so as to contact any worker (directly or through _____) other than an appropriately trained and equipped handler.
A. Drift C. Dusts
B. Droplets D. None of the Above

Oral Warnings to Workers
16. Oral warnings must include the the time during which entry is restricted.
A. True B. False

17. Oral warnings must include the instructions not to enter the treated area until the restricted-entry interval has expired.
A. True B. False

18. Workers who are on your establishment at the start of an application must be orally warned **before the application takes place**.
A. True B. False

19. Workers who are **not** on your establishment at the start of an application must be orally warned **at the beginning of their first work period** if (1) the application is still taking place or (2) the restricted-entry interval for the pesticide is in effect.
A. True B. False

20. Provide oral warnings to workers in a manner that they can understand.
A. True B. False

Topic 3 – Bees and Bee-Like Insects

Identifying characteristics for the family Halictidae include:
1. Most female bees have apparatus for gathering this pollen; it is combed into a special basket or brush located on the hind legs.
A. True B. False

Mason Bee
2. Smaller than a honeybee, mason bees resemble _____more than Honeybees.
A. Bumble bees C. Flies
B. Mosquitoes D. None of the above

3. Mason bees are native to _____.
A. North America C. Europe
B. South America D. None of the above

Orchid Bee Not to be confused with Orchard Bee
4. Male orchid bees have uniquely modified legs which are used to collect and store different volatile compounds throughout their lives, primarily from orchids in the sub-tribes Stanhopeinae and Catasetinae, where all species are exclusively pollinated by_____.
A. Ergonime males C. Females
B. Euglossine males D. None of the above

5. The male Eufriesea purpurata is highly unusual in actively collecting the _____in huge amounts from houses in Brazil, without suffering any harm from it.
A. Insecticide DDT C. Toxic dust
B. Pollen D. None of the above

Cuckoo Bee
6. Look for cuckoo bees flying low over the ground and foliage, hunting for foraging and nesting potential victims.
A. True B. False

7. Many cuckoo bees are closely related to their hosts, and may bear similarities in appearance reflecting this relationship. This common pattern gave rise to the ecological principle known as "_____".
A. Price's law C. Johnson standard
B. Emery's Rule D. None of the above

8. The queen bumble bee comes out of hibernation every _____to find a new spot to build her nest and start a new colony.
A. Spring C. Summer
B. Full moon D. None of the above

9. The queen bee is fertilized the previous season and has managed to live through the winter months. The same nesting spots from previous seasons are rarely used.
A. True B. False

10. A suitable place for nesting is usually on the ground, beneath a flat object. An old mouse hole or similar hole in the ground is preferred if it is underneath an old tarp, flat stone or man-made objects such as a deck. The hole chosen by the queen bee is first padded by pieces of vegetation such as dry grass or moss.
A. True B. False

Topic 4- Mosquito Section

Integrated Pest Management -Introduction

1. _____ is an important component to any successful IPM program because the results from the surveillance will help determine the appropriate response to an infestation.
A. Surveillance C. Lower levels of infestations
B. Pest prevention D. None of the above

2. Once mosquitoes have landed, they rely on _____to determine if we are an acceptable blood meal host.
A. Transient waters C. A number of short-range attractants
B. Torpor D. None of the above

3. Mosquitoes that hibernate in the adult stage live for 6-8 months, but spend most of that time in a_____.
A. Its life cycle C. State of torpor
B. Cocoon D. None of the above

4. IPM is a science-based and common-sense approach for_____, vectors, such as mosquitoes.
A. Managing pests C. Pest monitoring
B. Surveillance D. None of the above

5. IPM relies heavily on resident education and _____.
A. Pests and vectors C. Pest monitoring
B. Pest prevention D. None of the above

6. Aedes adults will oviposit near the edge of the swamp or within tussocks of vegetation, requiring later flooding to _____.
A. Begin its life cycle C. Inundate the eggs for hatching
B. Look for a blood meal D. None of the above

Mosquito Life Cycle Section

7. The type of standing water in which the mosquito chooses to lay her _____depends upon the species.

A. Nest C. Eggs
B. Raft D. None of the above

8. Sections of marshes, swamps, clogged ditches, and temporary pools and puddles are all prolific mosquito breeding sites. Other locations in which some species lay their _____ include tree holes and containers such as old tires, buckets, toys, potted plant trays, and saucers and plastic covers or tarpaulins.

A. Nest C. Eggs
B. Raft D. None of the above

9. The mosquito goes through three distinct stages during its life cycle.

A. TRUE B. FALSE

Wrigglers and Tumblers

10. After the female mosquito obtains a blood meal, she lays her eggs directly on the host.

A. TRUE B. FALSE

11. The larva lives in the water, feeds, and develops into the third stage of the life cycle called a pupa or "_____".

A. Ergatoids C. Wrigglers
B. Tumbler D. None of the above

Weather

12. Mosquito development and population dynamics are closely tied to weather. When and how much rain is received, wind speed and direction, maximum and minimum temperatures, and the total amount of heat energy accumulated are all critical to mosquito development.

A. TRUE B. FALSE

Water Source

13. The water or lack thereof in a habitat directly does not affects mosquito reproduction. Very few mosquitoes need standing water to complete their development.

A. TRUE B. FALSE

14. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.

A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

15. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.

A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

16. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.

A. Out-of-doors at night C. Northern half
B. Southern parts D. None of the above

17. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.
A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

18. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

19. Culex pipiens can be found in a fairly limited range of larval habitats, but are generally associated with water that has a low organic content.
A. TRUE B. FALSE

20. Culex pipiens' main host is wild donkeys, but it also feeds freely on a wide variety of warm-blooded vertebrates, including birds.
A. TRUE B. FALSE

Topic 5- Mosquito Identification Section

1. Culiseta melanura is critical because of its role in the transmission cycle of eastern equine encephalitis virus and potentially _____.
A. SLE C. WNV (West Nile virus)
B. Malaria D. None of the above

2. Culiseta melanura is a medium-sized mosquito that resembles Culex species because of its _____.
A. Bluntly rounded abdominal tip C. Brownish color with pale bands
B. Distinct ring around the proboscis D. None of the above

3. Culex pipiens the Northern House Mosquito has a distribution that roughly includes the _____of the United States.
A. Out-of-doors at night C. Northern half
B. Southern parts D. None of the above

4. Although they occur in_____, Culex pipiens reach their greatest numbers in urban and suburban areas and readily enter homes.
A. Out-of-doors at night C. Rural environments
B. Temporary ground water D. None of the above

5. Catch basins and storm drains provide ideal habitat for Cx. pipiens. The species becomes particularly abundant in areas where raw sewage leaks into_____.
A. Treeholes C. Effluent from sewage treatment plants
B. Subterranean drainage systems D. None of the above

6. Malaria was a serious plague in the United States for centuries until its final eradication in the 1950s. Despite the ostensible eradication, there are occasional cases of autochthonous (local) transmission in the U.S. vectored by An. quadrimaculatus in the east and Anopheles freeborni in the west.
A. True B. False

7. Culex pipiens can be found in a fairly limited range of larval habitats, but are generally associated with water that has a low organic content.
A. True B. False

8. Culex pipiens' main host is wild donkeys, but it also feeds freely on a wide variety of warm-blooded vertebrates, including birds.
A. True B. False

9. Culex pipiens is a serious pest, called the "house mosquito" because it commonly develops in small containers around the home. It shows great skill in finding ways to get into the house, where it feeds on_____.
A. Birds C. Effluent from sewage treatment plants
B. The occupants at night D. None of the above

10. Culex tarsalis breeds in nearly every freshwater source except _____. Larvae are found in all but the most polluted ground pools.
A. Treeholes C. Effluent from sewage treatment plants
B. Ground water D. None of the above

11. Culex tarsalis is the most important carrier of _____ in much of the western U.S.
A. WEE C. Western equine and Saint Louis encephalitis
B. Malaria D. None of the above

12. As mosquitoes go, the Western Encephalitis Mosquito is one of the more easily recognizable, with its _____.
A. Distinctive scale patterns C. High pitched scream
B. Distinct ring around the proboscis D. None of the above

13. Species in the genus Culex are known as “snowpool” mosquitoes.
A. True B. False

14. Woodland Malaria mosquitoes have four life stages: egg, larva, pupa, and adult. The immature stages need standing water to complete their life cycle.
A. True B. False

Effective Mosquito-Control Program
15. Initial surveys identify the species of mosquitoes present and provide general information on locations, densities and disease potential. With this knowledge it may be possible to determine life cycles and feeding preferences; predict larval habitats, adult resting places and flight ranges; and perhaps even make preliminary recommendations for control programs.
A. True B. False

Topic 6- Wood Destroyers- Termite Section

Feeding Habits
1. Termites feed primarily upon wood and wood products containing _____.
A. Moisture C. Fungi
B. Cellulose(s) D. None of the above

2. Termites have distinct protozoa in their intestine that provide enzymes to digest _____.

A. Moisture
B. Cellulose(s)
C. Wood
D. None of the above

Below Ground Termite Colonies

3. The colony may be up to _____ deep in the ground. The ground serves as a protection against extreme temperatures and provides a moisture reservoir.

A. 18-20 feet
B. 8-12 feet
C. 18-20 inches
D. None of the above

4. Termites obtain wood or _____ above ground by constructing and traveling through earthen (mud) tubes?

A. Nest
B. Cellulose materials
C. Mud
D. None of the above

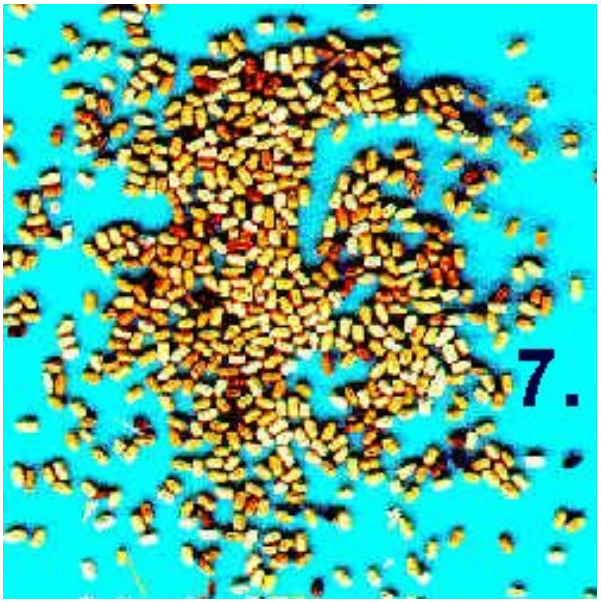
5. These are _____?

A. Soldiers
B. Workers
C. Swarmers
D. None of the above

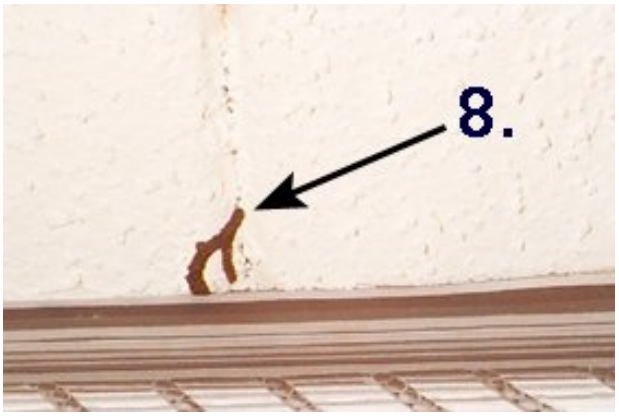
6. These are?
A. Workers
B. Frass
C. Alates
D. None of the above

7. These are?
A. Mud Holes
B. Frass
C. Eggs
D. None of the above

8. This is ?
A. Mud Tube
B. Castle
C. Entry
D. None of the above



9. This is ?
A. Mud Tubes
B. Erosion
C. Exits
D. None of the above



Above Ground Termite Colonies

10. Which of the following do not need a connection to soil and there is no soil in their feeding galleries? They do not build mud tunnels; they construct large, irregular galleries that run across and with the wood grain, with a very smooth, clean, and sandpaper-like appearance.

A. Drywood termites
B. Desert subterranean termite(s)
C. Western subterranean termite(s)
D. None of the above

Workers

11. The first broods of newly hatched nymphs (young termites) generally develop into _____.

A. Soldier(s)
B. Worker(s)
C. Alates
D. None of the above

Termite Identification Section

12. Which of the following is native to most forest areas where it performs the important task of breaking down the large quantities of dead and fallen trees and other sources of cellulose that continuously accumulate in the forests?

A. Formosan termite(s)
B. Desert subterranean termite(s)
C. Western subterranean termite(s) or Subterranean
D. None of the above

13. Which of the following termites are responsible for guarding the colony and its occupants? Termites continually groom each other to obtain certain secretions. These secretions help regulate the number of individuals in the various castes.

A. Soldier(s)
B. Worker(s)
C. Alates
D. None of the above

14. Which of the following works by blocking the gamma-aminobutyric acid (GABA) regulated chloride channel in neurons, thus disrupting the activity of the insect's central nervous system?

A. Boron
B. Fipronil
C. Chlorfenapyr
D. None of the above

Termite Product Applications

15. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.

A. 5 & 20
B. 4 & 10
C. 2 & 5
D. None of the above

16. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.

A. 1 to 1 1/2
B. .5 to 1
C. 1 to 2
D. None of the above

Crawl Spaces

17. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.

A. 18 inches
B. 24 inches
C. 6 inches
D. None of the above

18. Do not treat soil in _____ with a broadcast insecticide spray.
A. Insecticide barrier C. Interior vertical barrier
B. Crawl space area D. None of the above

Hollow Masonry Units of the Foundation Walls
19. When treatment is necessary, access holes must be drilled through mortar joints below the_____, as close as possible to the footing.
A. Insecticide barrier C. Interior vertical barrier
B. Sill plate D. None of the above

20. Removing the tubes provides a way to determine if a termite infestation remains _____after treatment or if the termites reappear in the same area later.
A. Active C. Complete termite treatment
B. Dormant D. None of the above

Topic 7- Termite and Wood Destroyer Management Section

1. Which of the following is a broad-spectrum pyrethroid insecticide. It is available in dusts, emulsifiable concentrates, smokes, ULV concentrates, and wettable-powder formulations?
A. Termidor® C. Chlorfenapyr
B. Permethrin D. None of the above

2. Though the mechanisms of toxicity are not fully understood, _____is very toxic to insects and decay fungi that commonly damage wood in structures.
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

3. At low levels, however, _____ is only minimally toxic, and perhaps beneficial, to humans, other mammals, and growing plants.
A. Termidor® C. Boron
B. Permethrin D. None of the above

4. Which of the following is registered as a termiticide under the tradename Phantom®?
A. Termidor® C. Chlorfenapyr
B. Fipronil D. None of the above

5. Which of the following acts on the mitochondria of cells and uncouples or inhibits oxidative phosphorylation, preventing the formation of the crucial energy molecule adenosine triphosphate (ATP)? As a result, energy production in the cells shuts down, resulting in cellular and, ultimately, termite death?
A. Chlorfenapyr C. Fipronil
B. Permethrin D. None of the above

6. Which of the following works by blocking the gamma-aminobutyric acid (GABA) regulated chloride channel in neurons, thus disrupting the activity of the insect's central nervous system?
A. Boron C. Chlorfenapyr
B. Fipronil D. None of the above

Termite Product Applications

7. Using a sub-slab injector, inject the insecticide at the rate of ____ gallons per _____ linear feet. For an insecticide barrier around the exterior of foundation walls, apply an insecticide by rodding and/or trenching.

A. 5 & 20 C. 4 & 10
B. 10 & 12 D. None of the above

8. The rod holes should be spaced _____ feet apart to provide a continuous chemical barrier. If a trench is necessary, it should not be wider than 6 inches.

A. 1 to 1 1/2 C. 1 to 2
B. .5 to 1 D. None of the above

Crawl Spaces

9. Establish vertical barrier(s) by rodding and/or trenching procedures. A shallow trench should not be wider than _____.

A. 18 inches C. 6 inches
B. 24 inches D. None of the above

10. Do not treat soil in _____ with a broadcast insecticide spray.

A. Insecticide barrier C. Interior vertical barrier
B. Crawl space area D. None of the above

Hollow Masonry Units of the Foundation Walls

11. Treat through masonry voids to provide a _____ at the top of the footing.

A. Insecticide barrier C. Spray barrier
B. Continuous chemical barrier D. None of the above

12. When treatment is necessary, access holes must be drilled through mortar joints below the_____, as close as possible to the footing.

A. Insecticide barrier C. Interior vertical barrier
B. Sill plate D. None of the above

13. State regulations require pest control operators to remove termite tubes as part of a lifetime protection.

A. TRUE B. FALSE

14. Removing the tubes provides a way to determine if a termite infestation remains _____after treatment or if the termites reappear in the same area later.

A. Active C. Complete termite treatment
B. Dormant D. None of the above

15. Control products containing inorganic borate can be applied to lumber at the time of construction, or later if exposed, to provide lifetime protection from infestation as long as the wood remains dry.

A. TRUE B. FALSE

Topic 8- Wood Borers- Beetles Section

1. This insect's life cycle is spent as the larva in the tree. They feed for a period of from 2-4 years and bore in the heartwood and sapwood. Infested trees can be weakened and break. A related species, causes galls on smaller limbs of poplars and aspens.
A. Carpenter ant C. Poplar borer larva
B. Clear-winged larva D. None of the above

2. This insect attacks black locust trees. The strikingly colored adults emerge in the fall and can be seen feeding on goldenrod.
A. Carpenter bees C. Locust borer adult
B. Pine sawyer larva D. None of the above

3. This insect commonly infests ash. The larvae look like those of the locust borer only smaller. It will attack elm, linden, redbud, and oak as well as ash trees.
A. Bronze birch borer larva C. Poplar and willow borer larva
B. Red headed ash borer adult D. None of the above

4. This insect is a large caterpillars that grow to almost three inches long. They mine the heart wood of trees. They attack poplars and cottonwoods and can attack many other trees as well.
A. Bark beetle adults C. Shot-hole borer
B. Carpenter worm D. None of the above

5. This insect can extensively mine limbs of susceptible trees. Poplars, willow, and cottonwood trees are hosts of several species.
A. Poplar borer C. Clear-winged moth larva
B. Ants D. None of the above

6. This insect is a pest because it mines in the ends of the new twigs of fruit trees and ornamental fruit trees. The new twigs start to grow and then wilt because these larvae are tunneling down the center of them. Adults are small grey moths.
A. Black moth C. Peach twig borer larva
B. Woody moth D. None of the above

7. The adult insect becomes a large grey moth.
A. Carpenter worm adult C. Poplar moth larva
B. Pine sawyer moth D. None of the above

8. This insect bores in trees as larvae. The adults resemble wasps in many cases.
A. Clear-winged moth C. Locust borer adult
B. Pine sawyer adult D. None of the above

9. This insect attacks pine trees and are usually found around homes as a result of being brought in with firewood. They seldom attack pine trees in residential plantings.
A. California laurel borer adult C. Pine sawyer adult
B. Red headed ash borer adult D. None of the above

10. This striking insect, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. Bronze birch borer adult
B. Red headed ash borer adult
C. Poplar and willow borer larva
D. None of the above

11. Paper birches are frequently attacked by this insect. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the California laurel borer.
A. Bark Beetle
B. Bronze birch borer adult
C. Pine sawyer adult
D. None of the above

12. The larvae mine the sapwood. Swollen areas on limbs show where the larvae feed and frass can be seen being forced out of holes in the bark as the larva feeds.
A. California laurel borer larva
B. Red headed ash borer larva
C. Poplar and willow borer larva
D. None of the above

13. Although not true borers, this insect attacks several evergreen trees. The adults usually emerge in mid-summer and lay eggs.
A. Bark beetle adults
B. Poplar borer
C. Shot-hole borer
D. None of the above

14. This insect attacks weakened or dead trees and shrubs. They feed deeper in the wood than bark beetles. The larvae are legless grubs.
A. Bark beetle adults
B. Carpenter bee
C. Shot-hole borer
D. None of the above

15. There are many bark beetle genera, of which the most important with respect to forest damage are Dendroctanus, Pitch, and Acolytes.
A. TRUE B. FALSE

16. Increased foliage in the tree is often the first sign of a beetle attack.
A. TRUE B. FALSE

17. Trees attacked by Ips spp. typically fade from the bottom of the tree, upwards while Dendroctonus spp. killed trees fade from the crown downwards. The needles change from green to a light green color within a few weeks to one year after attack and eventually become brown or red.
A. TRUE B. FALSE

18. Dust caused by boring in the bark crevices and at the tree base is another sign of Bark Beetles.
A. TRUE B. FALSE

19. Often, numerous small pitch tubes (globules of pitch ³.. to 1 ¹.." diameter) appear on the trunk of infested trees. The pitch tubes generally have a creamy appearance, much like crystallized honey.
A. TRUE B. FALSE

20. A black tint may be present in the pitch. The presence of one or two pitch tubes means that a beetle was successful. Often a few pitch tubes can indicate that the tree unsuccessfully repelled the attacking beetle. Clear sap that runs down the bole (trunk) or limbs is generally from bark beetles.
A. TRUE B. FALSE

Topic 9- Arachnid Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern

Spider Reproduction

1. All species of spiders have two separate sexes, and the males are usually larger than the females.
A. True B. False

2. _____ includes spiders and scorpions, mites and ticks, horseshoe crabs, daddy-longlegs, and extinct "sea-scorpions", to name a few.
A. The Chelicerata C. The Nematodes
B. The Chaetognatha D. None of the above

Spider Introduction

3. The spider then liquefies the tissues of the prey with a digestive fluid and sucks this broth into its_____, where it may be stored in a digestive gland.
A. Digestive gland C. Stomach
B. Cephalothorax D. None of the above

Spider's Life -Biology

4. The _____is strong and stiff, while the cuticle of the abdomen is soft and extensible.
A. Chelicerae cuticle C. Cephalothorax cuticle
B. Pedipalp cuticle D. None of the above

Spider Reproduction

5. All species of spiders have two separate sexes, and the males are usually larger than the females.
A. True B. False

6. A sexually mature male spider uses its pedipalp cuticle to transfer sperm cells into the female during mating. In this process, the male builds a sperm tower, onto which he deposits a drop of sperm from his abdomen.
A. True B. False

Types of Spider Webs

7. Web patterns vary considerably, depending on the species of spider. Perhaps the most recognizable web is the_____, in which an outer framework supports a continuous spiraling thread and a series of threads radiating from the center of the web.
A. Horizontal silk sheet with a dome C. Almost circular orb web
B. A tight or wide mesh web D. None of the above

Web Building

8. Spiders that weave orb webs generally begin by spinning a thread that is carried by _____ until it catches on a tree limb or other firm support. From this thread, the spider lays down another thread to form _____ that is the basic framework of the web.

A. Silk glands or glands - W-shaped structure
B. Air currents - Y-shaped structure
C. A raised tube in the corner – X -shaped structure
D. None of the above

Constructing an Orb Web

9. After having made the web, the spider will wait on or near the web for its prey to fall victim to its sticky trap.

A. True B. False

Spider Web Uses

10. Some species of spiders do not use their webs for catching prey directly, some spiders pounce from hiding such as trapdoor spiders, or some chase down their prey such as the wolf spider.

A. True B. False

Topic 10- Spider Identification Section

Two Primary Spider Groups

1. _____construct webs in rather quiet, undisturbed places to capture their food. They live in or near their web and wait for food to come to them. They generally have poor eyesight and rely on sensing vibrations in their web to detect prey.

A. Hobo spider(s) C. Pirate spider(s)
B. Web-building spiders D. None of the above

Jumping Spiders

2. Jumping spiders are generally small to medium-sized (about 1/5 - 1/2 inch long) and compact-looking. They are usually _____ with _____, although some can be brightly colored, including some with iridescent mouthparts.

A. Dark-colored – White markings C. White-colored – Black markings
B. Light colored – Dark markings D. None of the above

Ground Spiders

Crab Spider

3. Small crab spiders are dark or tan; some are lightly colored orange, yellow or creamy white. Their legs extend out from their sides causing them to scuttle back and forth in a crab-like fashion. These spiders hide in flower blossoms and may be brought inside in cut flowers.

A. True B. False

Brown Recluse Spider

4. The most definitive physical feature of recluse spiders is their eyes: most spiders have _____ eyes that typically are arranged in two rows of _____, but recluse spiders have _____equal-sized eyes arranged in three pairs.

A. 6 – 8 -- 3 C. 8 – 4 - 6
B. 3 – 6 - 8 D. None of the above

Cyphophthalmi

5. The Cyphophthalmi are a suborder of harvestmen, with about _____ genera, and more than _____ described species.

A. 100 - 36 C. 50 - 1000
B. 36 - 100 D. None of the above

Mygalomorphae

6. The Mygalomorphae, (also called the Orthognatha), are an infraorder of spiders. The latter name comes from the orientation of the fangs which point straight down and do not cross each other (as opposed to _____).

A. Australasian funnel-web spiders C. Theraphosa blondi
B. Araneomorph D. None of the above

7. Almost all species of Mygalomorphae have _____ eyes, however there are some with fewer (Masteria lewisi has only _____ eyes).

A. 6 – 8 C. 8 - 6
B. 3 - 8 D. None of the above

8. Unlike Araneomorphae, which die after about a year, Mygalomorphae can live for up to _____years, and some don't reach maturity until they are about _____years old. Some flies in the family Acroceridae which are endoparasites of mygalomorphs may remain dormant in the book lungs for as long as _____ years before beginning their development and consuming the spider.

A. 30 – 6 - 25 C. 25 – 6 - 20
B. 10 – 3 - 20 D. None of the above

Solifugae (Sun Spiders or Wind Scorpions)

9. Most Solifugae species live in deserts and feed opportunistically on ground-dwelling arthropods and other animals.

A. True B. False

Vinegarroons

10. The Vinegarroons' acetic acid gives this spray a vinegar-like smell, giving rise to the common name vinegarroon.

A. True B. False

Topic 11- Web Spider Section

(S) means the answer may be plural or singular. There are no intentional trick questions. Please provide the answer as exactly in the text. If you need assistance, please e-mail us your concern.

Orb Weaving Spiders

1. Venom toxicity - the bite of Orb-Weaving Spider is of high risk (toxic) to humans.

A. True B. False

Trap-Door Spiders

2. Venom toxicity - the bite of the Trap-Door Spider is of low risk (non-toxic) to humans. It is a non-aggressive spider - usually timid but may stand up and present its fangs if harassed. Rarely bites - but if so it can be painful.

A. True B. False

House Spider

3. The spider's web forms a tube, and the narrowed end serves as a retreat where the spider can hide. When an insect walks over the _____, the spider immediately rushes out from the funnel, grabs its victim, and delivers a poisonous bite. The spider then carries its prey back to its retreat, where it begins to feed.

A. Sheet web C. Oval web
B. Trap web D. None of the above

Garden Spiders

4. Garden spiders belong to the family Araneidae, a group of _____ different species of spiders that weave orb, or circular, webs.

A. 36 C. 2,500
B. 5,000 D. None of the above

Hobo Spider Information

5. The hobo spider is a member of the funnel-web spider family _____.

A. Solifugae C. Agelenidae
B. Araneomorphae D. None of the above

Spider Bite Section

6. All spiders (except the family _____) have venom glands, but not all are venomous to man. In fact very few species pose a threat to man. Some spider bites might need medical attention even if the species is recognized as not being venomous to man, as secondary infections can occur.

A. Uloboridae C. Agelenidae
B. Araneomorphae D. None of the above

7. Spider venom, like bee venom, is non-fatal.

A. True B. False

8. A patient may also have symptoms from a spider bite such as a red, itchy rash over the torso, arms and legs that is usually seen in the first 24-72 hours. Patients may have pain in the muscles and joints, fever, chills, swollen lymph nodes, headaches, and nausea and vomiting.

A. True B. False

9. Cytotoxic venom affects the cellular tissue**,** usually restricted to the area of the bite, but it can spread. The bite is at first painless, with symptoms developing about 2 to 8 hours after the bite. It starts by resembling a mosquito sting, becoming more painful and swollen. Eventually it ulcerates into a large surface lesion (up to 10 centimeters) that will require medical attention. This type of bite would result from members of the genera _____(family Sicariidae) and _____ (family Miturgidae).

A. Loxosceles - Cheiracanthium C. Mygalomorphae - Loxosceles
B. Loxosceles - Araneomorphae D. None of the above

Jumping Spiders

10. The _____is probably the most common biting spider in the United States. People are caught by surprise and scared when they see the spider jump, especially if it jumps towards them.

A. Brown recluse spider(s) C. Jumping spider(s)
B. Trap-Door Spider(s) D. None of the above

Topic 12- Tick Section

1. More than 800 species of ticks inhabit the planet. They are second only to mosquitoes as vectors of human disease,_____.
A. Including parasitic mechanisms
B. Causing allergic reaction(s)
C. Both infectious and toxic
D. None of the above

2. Ixodidae or Hard Ticks >700 species are distinguished from the Argasidae by the presence of a _____or hard shield.
A. Idiosoma
B. Capitulum (head)
C. Scutum
D. None of the above

Life cycle and reproduction

3. _____ticks undergo three primary stages of development: larval, nymphal, and adult.
A. Only Argasidae or Argasid
B. Only Dermacentor
C. Both ixodid and argasid
D. None of the above

Ixodidae

4. Ixodid ticks require three hosts, and their life cycle takes at least one year to complete. Up to 3,000 eggs are laid on the ground by an adult female tick.
A. 100
B. 3,000
C. 500
D. None of the above

5. All ticks have an incomplete metamorphosis: after hatching from the egg a series of similar stages (instars) develop from a_____, to eight legged nymph and then a sexually developed eight legged adult.
A. Six legged larva
B. Seven instar
C. Eight legged larva
D. None of the above

6. Between each stage there is a molt (ecdysis) which enables the developing tick to expand within a new_____.
A. Idiosoma
B. Haller's organ
C. External skeleton
D. None of the above

7. The family _____ contains the important genera Amblyomma, Dermacentor, Haemaphysalis, Hyalomma, Ixodes, Margaropus, and Rhipicephalus. Also the important boophilid ticks, formerly of the genus Boophilus, are now classified as a sub-genus within the genus Rhipicephalus.
A. Ornithodoros
B. Ixodidae
C. Dermacentor
D. None of the above

8. The cement serves to hold the _____ in place while the tick feeds.
A. Idiosoma
B. Capitulum
C. Mouthparts
D. None of the above

9. _____on larval and nymphal ticks are small with less penetration and produce a smaller host reaction.
A. Idiosoma
B. Hypostome
C. Mouthparts
D. None of the above

10. Adult Ixodes and _____ticks have long mouthparts that can reach the sub dermal layer of skin, produce a larger reaction, and make the tick harder to remove.
A. Argasidae or Argasid C. Dermacentor
B. Amblyomma D. None of the above

Please complete the entire assignment before submitting the answer key

Topic 13 -Tick Identification Section

Deer Tick Life Cycle

1. The deer tick passes through four life stages (egg, larva, nymph, adult), over a _____
A. Two month period C. Two year period
B. Three month period D. None of the above

Egg to Larvae

2. Eggs are fertilized in the fall and deposited in leaf litter the following_____.
A. Summer C. Spring
B. Month D. None of the above

3. The larvae then drop off their host into the leaf litter where they molt into the next stage, the nymph, remaining dormant until the following _____.
A. Summer C. Spring
B. Month D. None of the above

Larvae to Nymph

4. During the spring and early summer of the next year the nymphs end their dormancy and begin to seek a host. _____ are commonly found on the forest floor in leaf litter and on low lying vegetation.
A. Nymph(s) C. Females
B. Seven instars D. None of the above

Nymph to Adult

5. Over the next few months the nymph molts into the larger adult tick, which emerges in fall, with a peak in October through November. _____find and feed on a host, then the females lay eggs sometime after feeding.
A. Both male and female adults C. Larvae
B. Seven instars D. None of the above

Adult Ticks

6. In the fall of the second year, nymphs molt into adult ticks. Female adults are _____and larger than males.
A. Red or orange C. Black
B. Black and red D. None of the above

7. As female ticks feed over the course of several days, their bodies slowly enlarge with blood (engorge). Adult females infected with disease agents as _____may transmit disease during this feeding.
A. Both male and female adults C. Several nymphal stages
B. Larvae or nymphs D. None of the above

8. _____ticks attach, but do not feed or become engorged. Because the adult males do not take a blood meal, they do not transmit Lyme disease, human anaplasmosis, or babesiosis.
A. Nymph(s) C. The adult female
B. Male D. None of the above

Lone Star Tick Amblyomma americanum
9. Each female produces _____ eggs, which are deposited under leaf and soil litter in middle to late spring.
A. 300-800 C. 3,000-8,000
B. 30,000-80,000 D. None of the above

Winter Tick Dermacentor albipictus
10. _____is found throughout North America. It is widely distributed throughout California, but populations are concentrated around the central coastal and sierra foothill areas. It primarily feeds on horses and deer from fall through early spring. Heavy infestations of horses may cause emaciation and anemia (Furman and Loomis 1984).
A. This two host tick C. This one host tick
B. This no host tick D. None of the above

Topic 14 - Cockroach Section

Introduction
1. There are approximately 4,000 roach species are known worldwide; most cockroaches inhabit the warm tropical regions of the globe.
A. True B. False

2. Cockroaches leave feces as well as emitting airborne pheromones for nesting. These chemical trails transmit bacteria on surfaces.
A. True B. False

3. Roaches can survive without food for up to a month.
A. True B. False

Collective Decision-Making
4. Sociable cockroaches often display _____when choosing food sources.
A. Collective decision-making C. Two pieces of information
B. Pheromones D. None of the Above

Cockroach Life Cycle
5. All roaches have three stages in their life cycle -- egg, nymph (young) and adult. Some have live birth and others lay eggs.
A. True B. False

Reproduction
6. Cockroaches use pheromones to attract mates, and the males practice courtship rituals, such as posturing and _____.
A. Stridulation C. Form of breathing
B. Three stages D. None of the Above

7. Female cockroaches are sometimes seen carrying egg cases on the end of their abdomens; the German cockroach holds about 300 to 400 long, thin eggs in a case called an ootheca.
A. True B. False

Lungs and Breathing
8. Cockroaches, like all insects, breathe through a system of tubes called?
A. Tracheae C. Lungs
B. Ootheca D. None of the Above

9. While cockroaches do not have _____ and thus do not actively breathe in the vertebrate lung manner, in some very large species the body musculature may contract rhythmically to forcibly move air out and in the spiracles; this may be considered a form of breathing.
A. Tracheae C. Lungs
B. Ootheca D. None of the Above

Summary of Most Commonly Found Types of Cockroaches
10. Although the usual habitat for which cockroaches is outdoors, they often appear in homes, especially in wooded settings.
A. Oriental Cockroach C. Wood Cockroaches
B. German Cockroach D. None of the Above

11. Which roach is the largest cockroach commonly found within dwellings, measuring about 1 1/2 inches long when fully grown?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

12. Which roach require warmth, moisture, and food, which is why they are most common in kitchens and bathrooms?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

13. Which roach is shiny black or dark brown, and the adult is about 1-inch long?
A. Oriental Cockroach C. Brownbanded Cockroach
B. German Cockroach D. None of the Above

14. Which roach species is far less common than the German cockroach, but occasionally can be a problem in homes?
A. Brownbanded Cockroach C. Oriental Cockroach
B. American Cockroach D. None of the Above

15. Which roach is by far the most common cockroach infesting homes and buildings?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

Topic 15 – Common Cockroach Classifications Section

1. Giant cockroaches or blaberids (family Blaberidae) are the largest cockroach family. Commonly these live intside and people keep these pests as pets. 13 species in 20 genera in North America.
A. True B. False

2. The Blattellidae is a family of the order Blattaria (cockroaches). This family contains many of the smaller common household cockroaches, among others.
A. True B. False

3. The Blattidae is a family of the order Blattaria (cockroaches). It contains several of the least common household cockroaches.
A. True B. False

Scientific Classification

4. Cockroaches make up the order Blattodea, which contains five families.
A. True B. False

5. Which missing cockroach along with Blatella germanica, the Asian cockroach, Blatella asahinai, and the brownbanded cockroach, Supella longipalpa, are in the family Blatellidae?
A. Brownbanded Cockroach C. German Cockroach
B. American Cockroach D. None of the Above

6. Which males are 18-20 mm (¾") long and have a delicate brown-on-tan pattern on the pronotum. The wings are a mottled tan and longer than the abdomen?
A. Brownbanded Cockroach C. Desert Cockroach
B. American Cockroach D. None of the Above

7. Which females are 12-14 mm (½") long and have a broadly oval, somewhat hump-backed appearance?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

8. Which of the following are a live bearing species that grow to three inches or more?
A. Brownbanded Cockroach C. Death Head Roaches
B. Desert Cockroach D. None of the Above

9. The Field cockroach is very similar in appearance to which cockroach?
A. Brownbanded Cockroach C. German Cockroach
B. Desert Cockroach D. None of the Above

10. Which cockroach is about 5/8 inch long, overall light brown in color with wings that cover the abdomen? The thoracic shield just behind the head (pronotum) is marked with two prominent black stripes.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

11. Which cockroach is similar to the German cockroach in appearance, but it occurs primarily outdoors where it feeds on decaying plant materials. Compared to the German cockroach, it is more active during daylight hours and will be found around lights. They also are known to fly when disturbed.
A. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

12. Which cockroach 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. Field cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

13. Which cockroach is common outdoors, and lives in warm damp shady areas near the ground or any area containing natural debris. It will often seek refuge indoors when a drop in temperature occurs, but is still quite tolerable of cooler weather?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Outside Living
14. Which cockroach is found outdoors, applications of insecticides to foundation plantings, wood piles, mulch, and other infested locations are recommended?
A. Oriental cockroach C. Smokybrown cockroach
B. Brownbanded cockroach D. None of the Above

Chemical Control
15. Perimeter insecticide sprays may aid in the reduction of cockroaches entering homes from the exterior.
A. True B. False

Topic 16 – Cockroach Inspection and Treatment Section

Sanitation Elimination of Food Resources
1. Which roach can remain alive for approximately 2 weeks with no food or water and for 42 days if only water is available?
A. Oriental cockroach C. German Cockroach
B. Brownbanded cockroach D. None of the Above

Elimination of Moisture Resources
2. The single most important factor in determining cockroach survival is availability of?
A. Dark crevices C. Food
B. Water D. None of the Above

3. German cockroaches live less than two weeks when there is no supply of _____even if food is abundant.
A. Dark crevices C. Food
B. Free water D. None of the Above

Dark Locations – Similar to Rodents

4. In addition to food and water, cockroaches need _____in which to rest and breed, and these harborages must be identified during the inspection. Once again, use your knowledge of the target pest to focus your efforts.

A. Dark crevices C. Daytime hiding places
B. Water D. None of the Above

5. German cockroaches prefer dark crevices close to?

A. Dark crevices C. Food
B. Moisture D. None of the Above

6. Cockroaches prefer bare wooden surfaces, cardboard or paper because these surfaces are easier to climb and because porous surfaces retain their?

A. Aggregation pheromone C. Food
B. Water D. None of the Above

IPM Methods for Cockroaches (Types of Pest Control)

7. IPM programs use current, comprehensive information on the life cycles of pests and their

A. Pest management evaluations C. Judicious use of pesticides
B. Interaction with the environment D. None of the Above

8. IPM takes advantage of all appropriate _____ including, but not limited to, the judicious use of pesticides.

A. Entry and establishment C. Pest management options
B. Target of many insecticides D. None of the Above

9. IPM is not a _____but, rather, a series of pest management evaluations, decisions and controls. In practicing IPM, growers who are aware of the potential for pest infestation follow a four-tiered approach.

A. Pest management evaluations C. Single pest control method
B. Interaction with the environment D. None of the Above

Summary

Prevention

10. Entry and establishment of roach colonies can be prevented by _____of incoming merchandise, such as food boxes, beverage cartons, appliances, furniture and clothing.

A. Close inspection C. Pest management options
B. Target of many insecticides D. None of the Above

Sanitation

11. Good housekeeping is the _____in preventing and controlling cockroach populations. Cockroaches cannot live without food, water and shelter. Do not allow food particles to remain on shelves or floors.

A. Pest management evaluations C. Judicious use of pesticides
B. Most important factor D. None of the Above

Keys for Cockroach Control and/or Elimination
Chemical Control
12. Cockroaches have been the target of many insecticides over the years but they have _____to several of them.
A. Entry and establishment C. Developed resistance
B. Target of many insecticides D. None of the Above

13. Attempts to use pheromones as sex lures or to sterilize male cockroaches have thus far not proved practical on a large scale.
A. True B. False

Residual Sprays - Introduction
14. Residual sprays are generally easy and fast to apply.
A. True B. False

15. These formulations are oil-based or water-based emulsions and water-based suspensions (wettable powders).
A. True B. False

Topic 17 - Pesticide Applicator Section

1. _____containers removes a potential source of pesticide exposure to people, animals, and wildlife.
A. Rinsate C. Potential source of pesticide exposure
B. Rinsing D. None of the above

2. _____ is required by federal and state regulations and is a good, sound agricultural and environmental practice.
A. Rinsing C. Proper rinsing
B. Pesticide containers D. None of the above

3. Rinsate from the containers, when added directly into the_____, efficiently and economically uses all pesticide in the container. This eliminates the need to store and later dispose of the rinsate.
A. Sprayer tank C. Potential source of pesticide exposure
B. Ground water D. None of the above

4. Unless rinsed from the container immediately, _____ will solidify and become difficult to remove.
A. Contamination C. Some pesticides
B. Rinsing D. None of the above

Rinsing Helps Protect the Environment
5. _____reduces a potential source of contamination of soil, surface, and ground water.
A. Potential source of pesticide exposure C. Proper rinsing of pesticide containers
B. Pesticide container recycling D. None of the above

6. When contamination occurs, plants and animals may be harmed and water supplies affected. Prevention of environmental contamination is always better than cleanup. _____also helps in reducing the problem of handling pesticide wastes.
A. Contamination C. Rinsing
B. Pesticide containers D. None of the above

7. No matter how an empty pesticide container is disposed of**,** it must be properly_____ .
A. Rinsate C Rinsed and triple punched
B. Disposed in the trash D. None of the above

8. Both federal and state laws require rinsing. Landfill operators and recyclers can only accept_____.
A. Contamination C. Pesticide containers
B. Properly rinsed containers D. None of the above

9. Pesticide containers should never be offered to recycling projects designed for pesticide containers.
A. TRUE B. FALSE

Federal Pesticide Recordkeeping Requirements
10. The EPA currently requires certified commercial applicators to keep _____ under regulations implementing the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).
A. Record(s) C. Restricted use pesticide
B. EPA registration number D. None of the above

The recordkeeping requirements are:
11. The brand or product name, and the _____ of the restricted use pesticide that was applied;
A. Location of the application C. Spot application(s)
B. EPA registration number D. None of the above

12. The total amount of the _____ applied;
A. Location of the application C. Spot application(s)
B. Restricted use pesticide D. None of the above

13. The location of the application, the_____ , and the crop, commodity, stored product, or site to which a restricted use pesticide was applied;
A. Size of area treated C. Restricted use pesticide
B. EPA registration number D. None of the above

14. The name and certification number (if applicable) of the certified applicator who applied or who supervised the application of the _____.
A. Record(s) C. Restricted use pesticide
B. Spray D. None of the above

15. _____ must be recorded with the following information: Brand or product name and EPA registration number; total amount applied; location must be designated as "spot application," followed by a concise description of the location.
A. Location of the application C. Spot application(s)
B. Record(s) D. None of the above

16. The use of gloves is _____ when working with highly toxic pesticides. It is recommended that only unlined rubber or neoprene (nitrile, etc.) gloves be used when handling or using all pesticides. Unlined gloves should be thoroughly washed (inside and outside) after each use.

A. Mandatory
B. OSHA's recommendations
C. EPA'S requirements
D. None of the above

17. Gloves should be at least _____ inches long to provide adequate protection for wrists and the cuffs should be inside sleeves for most work. This will keep runoff pesticide from getting into the gloves. However when working overhead put the cuffs of gloves outside sleeves.

A. 6
B. 8
C. 12
D. None of the above

Goggles and Face Shields

18. It is necessary to wear splash-proof goggles when working with pesticides. Not only can the pesticide be absorbed through the eyes but the _____ can cause permanent eye injuries also.

A. EPA's recommendation(s)
B. Acidity of a pesticide
C. Mixing or applying pesticides
D. None of the above

19. Use goggles meeting or exceeding _____ estimate. When pouring or mixing concentrates it is preferable to use a full-face shield to protect the face from splashes. Always wash the goggles or face shield with soap and water after use.

A. ANSI standard Z87.1, 1968
B. Guidance
C. EPA's recommendation(s)
D. None of the above

20. Unlined rubber or neoprene (nitrile, etc.) boots should be worn over work shoes or in place of work shoes when mixing or applying pesticides. Pull the legs of trousers over the tops of boots to help prevent _____ from getting inside boots. Wash boots with soap and water after each use.

A. Spilled pesticide
B. Runoff pesticide
C. Mixing or applying pesticides
D. None of the above

California DPR Requirement

The Assignment must be submitted to TLC by December 27 in order to be submitted to DPR by the 30th. If it is late, you will be penalized $50 per day.