Registration form

Wood Destroyers $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. Signature is required.
You can electronically sign with XXX

Signature _____

Address: _____

City_____ State _____Zip_____

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

Fax (____)_____ Email_____

License #_____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
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info@tlch2o.com Visit us on the web at www.abctlc.com

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

Important Information about this Course (Disclaimer Notice)

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

This CEU course contains pesticide recommendations that are subject to change at any time. These recommendations are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registration, some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The author and Technical Learning College (TLC) assume no liability resulting from the use of these recommendations.

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 OR HERB OR HERBAL SUPPLEMENT. ALWAYS FOLLOW THE PRODUCT'S LABEL INSTRUCTIONS.

CUSTOMER SERVICE RESPONSE CARD

Wood Destroyers 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.

_____

_____

Assignment Instructions

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.

Assignment #1 for all pest applicators whose last name begins with **A-E** you will find your assignment on pages 9-16.

Assignment #2 for all pest applicators whose last name begins starting with the letter **F-L**, your assignment is found on pages 17-24.

Assignment #3 for all pest applicators whose last name begins starting with the letter **M-Q**, your assignment is found on pages 25-32.

Assignment #4 for all pest applicators whose last name begins starting with the letter **R-Z**, your assignment is found on pages 33-41.

Assignment #5 for all repeat students or students who require the supplemental examination. Your assignment is found on pages 43-50.

When Finished with Your Assignment

REQUIRED DOCUMENTS
Please scan the **Registration Page, Answer Key, Proctoring report, Survey and Driver's License** and email it to info@TLCH2O.com.

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

FAX
If you are unable to scan and email, please fax these to TLC, if you fax, call to confirm that we received your paperwork. **(928) 468-0675**

Wood Destroyers Control Answer Key

Name_____

Phone# _____

You are responsible to ensure that this course is accepted for credit by your State. No refunds. Did you check with your State agency to ensure this course is accepted for credit?

Method of Course acceptance confirmation. Please fill this section

Website __ Telephone Call___ Email____ Spoke to_____

Did you receive the approval number, if applicable? _____

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

California DPR Requirement

The Assignment must be submitted to TLC by December 27 in order to be submitted to DPR by the 31st. If it is late, you will be penalized $50 per day.

Multiple Choice. Pick only one answer per question.

Circle or Mark off or Bold the answer. Please circle the number of the assignment version 1 or 2 or 3 or 4 or 5

Topic 1 - Introduction to Wood

1. A B C D
2. A B C D
3. A B C D
4. A B C D
5. A B C D
6. A B C D
7. A B C D
8. A B C D
9. A B C D
10. A B C D

Topic 2 - Termite Section

1. A B C D
2. A B C D
3. A B C D
4. A B C D
5. A B C D
6. A B C D
7. A B C D
8. A B C D
9. A B C D
10. A B C D

Topic 3 - Ant Identification - 1 Node Section

1. A B C D
2. A B C D
3. A B C D
4. A B C D
5. A B C D
6. A B C D
7. A B C D
8. A B C D
9. A B C D
10. A B C D

Topic 4 - Ant Identification - 2 Node Section

1. A B C D	5. A B C D	9. A B C D
2. A B C D	6. A B C D	10. A B C D
3. A B C D	7. A B C D	
4. A B C D	8. A B C D	

Topic 5 - Wood Preservatives and Insecticides Section

1. A B C D	5. A B C D	9. A B C D
2. A B C D	6. A B C D	10. A B C D
3. A B C D	7. A B C D	
4. A B C D	8. A B C D	

Topic 6 - Fungus and Wood Fungi Section

1. A B C D	5. A B C D	9. A B C D
2. A B C D	6. A B C D	10. A B C D
3. A B C D	7. A B C D	
4. A B C D	8. A B C D	

Complete all the Topical Sections before submitting the answer key

Amount of Time for Course Completion – How many hours you spent on course?

Must match State Hour Requirement _____ (Hours)

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 not hold TLC liable for any errors, injury, death or non-compliance with rules. I will abide with all federal and state rules and rules found on page 2 and 4. I will forfeit my purchase costs and will not receive credit or a refund if I do not abide with TLC's rules.

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

_____

Signature

CERTIFICATION OF COURSE PROCTOR

Technical Learning College requires that our students who takes a correspondence or home study program course must pass a proctored course reading, quiz and final examination. The proctor must complete and provide to the school a certification form approved by the commission for each examination administered by the proctor.

Instructions. When a student completes the course work, fill out the blanks in this section and provide the form to the proctor with the examination.

Name of Course:_____

Name of Licensee:_____

Instructions to Proctor. After an examination is administered, complete and return this certification and examination to the school in a sealed exam packet or in pdf format.

I certify that:

1. I am a disinterested third party in the administration of this examination. I am not related by blood, marriage or any other relationship to the licensee which would influence me from properly administering the examination.
2. The licensee showed me positive photo identification prior to completing the examination.
3. The enclosed examination was administered under my supervision on _____ ___. The licensee received no assistance and had no access to books, notes or reference material.
4. I have not permitted the examination to be compromised, copied, or recorded in any way or by any method.
5. Provide an estimate of the amount of time the student took to complete the assignment.

Time to complete the entire course and final exam. _____

Notation of any problem or concerns:

Name and Telephone of Proctor (please print):

_____

_____

Signature of Proctor

Wood Destroyers Assignment #1
For Students Names A-E

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 90 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 468-0675. 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.

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 Introduction to Wood - 10 Questions
(s) means the answer may be either plural or singular in nature.

Understanding Wood
1. Between the existing wood and the inner bark, of _____ which envelop the entire stem, living branches, and roots.
A. Sap-staining C. New woody layers
B. Earlywood D. None of the above

Growth Rings
2. Where there are clear seasons, growth can occur in a discrete annual or _____, leading to growth rings; these can usually be most clearly seen on the end of a log, but are also visible on the other surfaces.
A. Protoplasmic contents C. Growth ring
B. Seasonal pattern D. None of the above

3. If these seasons are annual these growth rings are referred to as annual rings. Where there is no seasonal difference growth rings are likely to be_____.
A. Sap-staining C. Indistinct or absent
B. Earlywood D. None of the above

4. If there are differences within a growth ring, then the part of a growth ring nearest the center of the tree and formed early in the growing season when growth is rapid, is usually composed of _____.
A. Protoplasmic contents C. Wider elements
B. Spalting D. None of the above

5. It is usually lighter in color than that near the outer portion of the ring, and is known as earlywood or springwood. The outer portion formed later in the season is then known as the_____.
A. Earlywood C. Latewood or summerwood
B. Strength of wood D. None of the above

6. The members of fungus beetles two orders develop by _____, advancing from eggs to larvae, pupae, and adults.
A. Incomplete metamorphis C. Complete metamorphis
B. Skipping metamorphis D. None of the above

7. Ants of the genus Camponotus often nest in wood. There are many different carpenter ant species, but only one poses a major pest problem, (the Black carpenter ant (Camponotus pennsylvanicus).
A. TRUE B. FALSE

8. Carpenter ants are among the largest species that you'll find. Like other ant species, carpenter ants are social, i.e., they live in a colony and have several "_____" or adult forms that perform different jobs in the colony.
A. Mud tubes C. Castes
B. Old house borer D. None of the above

9. The California laurel borer, mines in dead ash, laurel, and willow. It is t a threat to healthy trees.
A. TRUE B. FALSE

10. Paper birches are frequently attacked by the bronze birch borer. Adults emerge in June and lay eggs in October. Note they have similar shapes to the other borers
A. TRUE B. FALSE

Topic 2 Termite Introduction - 10 Questions

(s) means the answer may be either plural or singular in nature.

1. There are about 2,500 termite species in the world. North America has _____, termite species most in the southeast USA. Alaska is the only state without termites.
A. 41 C. 25
B. 75 D. None of the above

Feeding Habits
2. Subterranean termites feed mainly on wood and wood products containing cellulose. Termites have _____ in their intestine which provide enzymes to digest cellulose.
A. Mechanisms C. Enzymes
B. Protozoa (microorganisms) D. None of the above

Termite Reproduction
3. The female assumes a "calling" position with her abdomen elevated at a right angle to the rest of her body. She releases a _____which attracts nearby males. Once a male encounters a calling female, she moves off.
A. Odor C. Chemical messenger (pheromone)
B. Tap D. None of the above

Development of the Colony

4. After the first group of eggs has been laid, there is a period of several _____ before another group is laid. This process continues for several_____.

A. Days - Weeks C. Month - Years
B. Weeks - Months D. None of the above

Fungi

5. Fungi also play a role in _____. Certain wood decay fungi are highly attractive to termites.

A. Termite nutrition C. Finding a new structure
B. Cellulose for their nutrition D. None of the above

Moisture

6. _____ to the survival of termites. Subterranean termites obtain most of their moisture from the soil. They maintain contact with the soil in order to survive.

A. Source of nitrogen is vital C. Moisture is vital
B. Moisture is not vital D. None of the above

Tolerances

7. Termites have very little tolerance to_____, or extremes of hot and cold. But they often must forage far, sometimes above ground, from their initial workings to find food.

A. Pesticides C. Wet conditions
B. Dry conditions D. None of the above

8. They move underground through tunnels. Whenever the termites leave the confines of the soil or the wood in which they are feeding, they _____in which to move from the soil to the wood or the above-ground nest.

A. Build above-ground nests C. Construct shelter tubes
B. Develop plans D. None of the above

Subterranean Termites

9. When subterranean termites invade the wood of a structure that is separated from the soil by intervening concrete, masonry or other impervious material, they _____ over the surface to the wood.

A. Build above-ground nests C. Construct shelter tubes
B. Develop plans D. None of the above

Castles

10. Under certain conditions a fourth type of tube is constructed. Called swarming tubes or swarming "castles" they are constructed as flight platforms for swarmers and they have many turret-like projects and _____that vaguely resemble castle towers.

A. Flattened vertical branches C. Flattened horizontal branches
B. Extend the damage D. None of the above

Topic 3 - Ant Identification Section 1 Node - 10 Questions

1. Ants are a pest in the balance of nature. In nature, ants greatly increase the amount of dead and decaying plant and animal organic matter.
A. TRUE B. FALSE

2. Ants can be controlled with a combination of good sanitation, removing _____, caulking entry points, and eliminating active nests.
A. Active nests C. Pheromone trails
B. Ant infestations D. None of the above

3. Insecticide sprays and baits can be used to kill foraging ants and destroy nests, but strategies designed to prevent further infestations should be used in conjunction with chemical treatment.
A. TRUE B. FALSE

4. Ant infestations are not easy to control and different strategies should be used depending on _____of the ants.
A. Active nests C. Nest location and food preferences
B. Infestations D. None of the above

5. The head has two strong jaws, the mandibles, used to carry food, manipulate objects, construct nests, and for defense. In some species, a small pocket (_____) inside the mouth stores food, so it may be passed to other ants or their larvae.
A. Storage structures C. Infrabuccal chamber
B. Mesosoma ("thorax") D. None of the above

6. Both the _____of the ant are attached to the thorax. The legs terminate in a hooked claw which allows them to hook on and climb surfaces.
A. Reproductive structures C. Arms and wings
B. Legs and wings D. None of the above

7. Workers of many species have their egg-laying structures modified into _____that are used for subduing prey and defending their nests.
A. Egg-laying structures C. Stinger(s)
B. Excretory systems D. None of the above

Carpenter Ants - 1 Node ant – Wood Destroyer

8. Carpenter ants are large (about 3/8” to 1/2" long) and black or red. Carpenter ants are usually smaller than most other house- infesting ants. They vary in color from a dull black or reddish yellow color to a combination of black and dull red or reddish-orange. Soldier ants range in size from 5/16 to 7/16 inches long.
A. TRUE B. FALSE

9. Treatment options include use of a _____applied as a dust or spray to the nest.
A. Insecticide dilutions C. Bait or residual contact insecticide
B. Dust or spray D. None of the above

10. Carpenter ants are least active in the evening hours, foraging for all kinds of food, outside. By following the ants, you will never be able to tell where the nest is.
A. TRUE B. FALSE

Topic 4 - 2 Node Ant Identification and Control Section - 10 Questions

1. Most retail products are _____ containing hydramethylnon, sulfluramid, abamectin, or boric acid.
A. Insecticide dilutions C. Liquid or granular formulations
B. Dust or spray D. None of the above

2. Which of the following and insecticides can be used to control ants in the outside nest?
A. Insecticide dilutions C. Bait treatments
B. Cellose D. None of the above

3. Which of the following can be used outside to successfully drench ant nests? Be sure to follow label recommendations for correct procedures when applying the insecticide.
A. Insecticide dilutions C. Bait treatments
B. Dust or spray D. None of the above

4. When possible, remove wood that contains carpenter ant nests, or destroy the colony. When this is not practical, and carpenter ants have been discovered entering your home from outdoor nests, a treatment with a _____ around the building's exterior helps keep them out of your home.
A. Insecticide dilutions C. Non-residual insecticide
B. Residual insecticide D. None of the above

5. Which of the following missing terms, covering the foundation and under the lower edge of the siding to help keep ants from coming inside?
A. Insecticide formula C. Spray the product in a band
B. Dust in a circle D. None of the above

6. Chemical Control. Ants can be controlled with baits, crack and crevice treatments, indoor space and surface treatments, outdoor barrier and broadcast treatments, as well as void and attic treatments.
A. TRUE B. FALSE

7. Since ants do not rely on trophallaxis, the bait toxicant cannot be thoroughly distributed to the members of the colony, including the queen and brood.
A. TRUE B. FALSE

8. Quick-kill insecticides and baits will only kill the foraging ants, not allowing the foraging ants to take the bait back home to feed the queen, nest workers and brood.
A. TRUE B. FALSE

Key
9. The key to using baits is excess. Applied properly and using a fresh bait product, a broadcast application will give 50% to 60% control, rarely 70%.
A. TRUE B. FALSE

Carpenter Ant Infestations

10. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct moisture problems such as leaky roofs and plumbing. Paint and/or seal exposed wood construction before it becomes wet.

A. TRUE B. FALSE

Topic 5 Wood Preservatives and Insecticides -10 Questions

Chromated Copper Arsenate (CCA)

1. EPA has classified CCA as a _____, for use only by certified pesticide applicators.

A. Co-biocide
B. Restricted use product
C. Chemical preservative
D. None of the above

Chemical Preservatives

2. Before a wood preservative can be approved for pressure treatment of structural members, it must be evaluated to ensure that it provides the necessary durability and that it does not greatly reduce the strength properties of the wood.

A. TRUE B. FALSE

Waterborne Preservatives

3. Copper is the _____in many wood preservative formulations used in ground contact because of its excellent fungicidal properties and low mammalian toxicity.

A. Co-biocide
B. Unrestricted use product
C. Primary biocide
D. None of the above

4. Water is the most common solvent carrier in _____due to its availability and low cost. Water-borne systems do however have the drawback that they swell timber, leading to increased twisting, splitting and checking than alternatives.

A. Permethrin
B. Preservative formulations
C. Solutions of waterborne preservatives
D. None of the above

Chromated Copper Arsenate (CCA)

5. Chromated copper arsenate or CCA, is a chemical preservative that protects wood from rotting due to insects and microbial agents. CCA contains_____.

A. Arsenic, chromium and copper
B. Chemical preservatives
C. Wood preservations, insecticides, fungicides
D. None of the above

Pressure Treatment Process

6. In the pressure treatment process, an aqueous solution of CCA is applied using a vacuum and pressure cycle, and the treated wood is then stacked to dry. During the process, the mixture of oxides reacts to form insoluble compounds, helping with _____problems.

A. Heat treatment
B. Leaching
C. Salts
D. None of the above

Naphthenates

7. Naphthenates are _____ and have industrial applications including synthetic detergents, lubricants, corrosion inhibitors, fuel and lubricating oil additives, wood preservations, insecticides, fungicides, acaricides, wetting agents, and oil drying agents used in painting and wood surface treatment.

A. Solutions of waterborne preservatives
B. Synthetic pyrethroids
C. Salts
D. None of the above

Other Emulsions

Light Organic Solvent Preservatives (LOSP)

8. This class of timber treatments use white spirit, or light oils such as kerosene, as the solvent carrier to deliver preservative compounds into timber. _____are typically used as an insecticide, such as permethrin, bifenthrin or deltamethrin. The most common formulations use Permethrin as an insecticide, and Propaconazole and Tebuconazole as fungicides. While still using a chemical preservative, this formulation contains no heavy-metal compounds.

A. Solutions of waterborne preservatives
B. Synthetic pyrethroids
C. Salts
D. None of the above

New Technologies

Glass Fortified Wood

9. Glass Fortified Wood (glass wood) is lumber that has gone through a process that intermixes a non-_____ based formula throughout the wood fibers protecting the wood from fire, rot and insect damage.

A. Extractives
B. Polyphenols
C. Toxic sodium silicate (water glass)
D. None of the above

Natural Preservatives

Naturally Rot-Resistant Woods

10. These species are resistant to decay in their natural state, due to high levels of organic chemicals called extractives, mainly_____.

A. Extractives
B. Polyphenols
C. Toxic sodium silicate (water glass)
D. None of the above

Topic 6 - Fungus and Wood Fungi Section -10 Questions

1. A fungus or fungi is a member of a large group of _____ organisms that includes microorganisms such as yeasts and molds, as well as the more familiar mushrooms.

A. Fungi
B. Prokaryotic
C. Eukaryotic
D. None of the above

Reproduction

2. Fungal reproduction is complex, reflecting the differences in lifestyles and genetic makeup within this kingdom of organisms. It is estimated that a third of _____reproduce by different modes of propagation; for example, reproduction may occur in two well-differentiated stages within the life cycle of a species, the teleomorph and the anamorph.

A. Some fungi
B. Fungi imperfecti
C. All fungi
D. None of the above

Asexual Reproduction

3. The "_____" (fungi lacking the perfect or sexual stage) or Deuteromycota comprise all the species which lack an observable sexual cycle.

A. Some fungi C. All fungi
B. Fungi imperfecti D. None of the above

Preventing Rot

4. The key to preventing rot is to control the wood's exposure to moisture and to employ an effective prevention and treatment program. Most wood decay fungi grow only on wood with a high moisture content, usually _____ percent or above. Green (unseasoned) lumber is a prime target for decay fungi.

A. 50 C. 20
B. 40 D. None of the above

Decay Fungi

5. Decay fungi can cause severe structural damage to any wood member, even wood species such as redwood and cedar. All that is needed is a source of water in contact with the wood.

A. TRUE B. FALSE

Molds and Stains

6. Molds and stain fungi are sometimes mistaken for decay, and while they may discolor wood, they cause no structural wood damage. The presence of molds and stains, however, is a sign that conditions are favorable for decay fungi and a preventative treatment may be necessary.

A. TRUE B. FALSE

Brown Discoloration and a Crumbly Appearance

7. In one type of rot, the decayed area has a brown discoloration and a crumbly appearance. It usually breaks up into variously-sized cubes, giving rise to the name "_____ ."

A. Mildew rot C. Red rot
B. Brown cubical rot D. None of the above

8. Although many _____ may grow for long periods without producing any external evidence of their presence, others produce "fruiting bodies" on the surface of decaying wood.

A. Decay fungi C. Fruiting bodies
B. Wood rots D. None of the above

Stain Fungi

9. Surface molds, "_____," and stain fungi are often found growing on the surface of damp wood and can be confused with decay fungi.

A. Mildew(s) C. Mold(s)
B. Fungal spore(s) D. None of the above

Disease Cycle of Decays

10. First, decay occurs for many years, between the stages of _____and fruiting, and _____ may continue for many years.

A. Plasmogamy - Mildew(s) C. Spores - Mold(s)
B. Plasmogamy - Fruiting D. None of the above

Wood Destroyers Assignment #2
For Students Names F-L

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 90 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 468-0675. 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.

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 Introduction to Wood - 10 Questions
(s) means the answer may be either plural or singular in nature.

Understanding Wood
1. Between the existing wood and the inner bark, of _____ which envelop the entire stem, living branches, and roots.
A. Sap-staining C. New woody layers
B. Earlywood D. None of the above

Growth Rings
2. If there are differences within a growth ring, then the part of a growth ring nearest the center of the tree and formed early in the growing season when growth is rapid, is usually composed of _____.
A. Protoplasmic contents C. Wider elements
B. Spalting D. None of the above

3. It is usually lighter in color than that near the outer portion of the ring, and is known as earlywood or springwood. The outer portion formed later in the season is then known as the_____.
A. Earlywood C. Latewood or summerwood
B. Strength of wood D. None of the above

4. Where there are clear seasons, growth can occur in a discrete annual or _____, leading to growth rings; these can usually be most clearly seen on the end of a log, but are also visible on the other surfaces.
A. Protoplasmic contents C. Growth ring
B. Seasonal pattern D. None of the above

5. If these seasons are annual these growth rings are referred to as annual rings. Where there is no seasonal difference growth rings are likely to be_____.
A. Sap-staining C. Indistinct or absent
B. Earlywood D. None of the above

6. The members of fungus beetles two orders develop by _____, advancing from eggs to larvae, pupae, and adults.
A. Incomplete metamorphis C. Complete metamorphis
B. Skipping metamorphis D. None of the above

7. Ants of the genus Camponotus often nest in wood. There are many different carpenter ant species, but only one poses a major pest problem, (the Black carpenter ant (Camponotus pennsylvanicus).
A. TRUE B. FALSE

8. Carpenter ants are among the largest species that you'll find. Like other ant species, carpenter ants are social, i.e., they live in a colony and have several "_____" or adult forms that perform different jobs in the colony.
A. Mud tubes C. Castes
B. Old house borer D. None of the above

9. Paper birches are frequently attacked by the bronze birch borer. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the other borers
A. TRUE B. FALSE

10. The California laurel borer, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. TRUE B. FALSE

Topic 2 Termite Introduction - 10 Questions

(s) means the answer may be either plural or singular in nature.

Tolerances
1. Termites have very little tolerance to_____, or extremes of hot and cold. But they often must forage far, sometimes above ground, from their initial workings to find food.
A. Pesticides C. Wet conditions
B. Dry conditions D. None of the above

Subterranean Termites
2. When subterranean termites invade the wood of a structure that is separated from the soil by intervening concrete, masonry or other impervious material, they _____ over the surface to the wood.
A. Build above-ground nests C. Construct shelter tubes
B. Develop plans D. None of the above

Castles
3. Under certain conditions a fourth type of tube is constructed. Called swarming tubes or swarming "castles" they are constructed as flight platforms for swarmers and they have many turret-like projects and _____that vaguely resemble castle towers.
A. Flattened vertical branches C. Flattened horizontal branches
B. Extend the damage D. None of the above

Severe Damage
4. Severe damage by subterranean termites is not likely to occur in the first 8 or 10 years after construction.
A. TRUE B. FALSE

Communication in the Colony
5. Termites primarily communicate via chemicals called_____. Each colony develops its own characteristic _____.
A. Attack - smell C. Pheromones - odor
B. Pheromones -defense D. None of the above

6. Any intruder is _____and an alarm pheromone is released that triggers the soldiers to attack the intruder.
A. Easily probed C. Instantly recognized
B. Perceived D. None of the above

Look for these signs of termite feeding:
7. Wood that sounds _____ when it is tapped with the handle of a screwdriver.
A. Hollow C. Like a liquid
B. Like a ripe watermelon D. None of the above

Winged Termites
8. Large numbers of winged termites swarming from wood or the soil often are the first obvious sign of a nearby termite colony.
A. TRUE B. FALSE

9. Swarming occurs in mature colonies that typically contain at least several thousand termites.
A. TRUE B. FALSE

Mud Tubes
10. Other signs of Termite(s) presence include mud tubes and mud protruding from cracks between boards and beams.
A. TRUE B. FALSE

Topic 3 - Ant Identification Section 1 Node - 10 Questions

1. Ants can be controlled with a combination of good sanitation, removing _____, caulking entry points, and eliminating active nests.
A. Active nests C. Pheromone trails
B. Ant infestations D. None of the above

2. Insecticide sprays and baits can be used to kill foraging ants and destroy nests, but strategies designed to prevent further infestations should be used in conjunction with chemical treatment.
A. TRUE B. FALSE

3. Ant infestations are not easy to control and different strategies should be used depending on _____of the ants.
A. Active nests C. Nest location and food preferences
B. Infestations D. None of the above

4. Workers of many species have their egg-laying structures modified into _____that are used for subduing prey and defending their nests.
A. Egg-laying structures C. Stinger(s)
B. Excretory systems D. None of the above

Carpenter Ants - 1 Node ant – Wood Destroyer
5. Carpenter ants are least active in the evening hours, foraging for all kinds of food, outside. By following the ants, you will never be able to tell where the nest is.
A. TRUE B. FALSE

6. Carpenter ants tunnel into wood to form nest galleries. If they go unnoticed for several years, they may cause structural damage. Outdoors, the ants use dead trees or tree limbs, stumps, logs or areas under stones as nesting sites.
A. TRUE B. FALSE

7. Because carpenter ants keep the _____very clean and push the sawdust and dead insect parts out small holes in the wood, a small, fresh pile of sawdust under the nest timber is the usual sign of an active carpenter ant nest.
A. Nest galleries C. Tunneled galleries
B. Wall voids D. None of the above

8. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct _____such as leaky roofs and plumbing.
A. Moisture problems C. Electrical outlets
B. Wall voids D. None of the above

9. If it is difficult to locate the nest, a(n) _____can be applied into wall voids through electrical outlets.
A. Insecticide dilutions C. Spray product
B. Insecticidal dust D. None of the above

10. Nests are often concealed in wall voids, ceilings, subfloors, attics, or hollow doors. It is usually necessary for a professional pest control applicator to drill small (about 1/8 inch) holes and apply an insecticidal dust into the nest area. It is best to determine the nest's location as specifically as possible.
A. TRUE B. FALSE

Topic 4 - 2 Node Ant Identification and Control Section - 10 Questions

1. Most retail products are _____ containing hydramethylnon, sulfluramid, abamectin, or boric acid.
A. Insecticide dilutions C. Liquid or granular formulations
B. Dust or spray D. None of the above

2. Which of the following and insecticides can be used to control ants in the outside nest?
A. Insecticide dilutions C. Bait treatments
B. Cellose D. None of the above

3. Which of the following can be used outside to successfully drench ant nests? Be sure to follow label recommendations for correct procedures when applying the insecticide.
A. Insecticide dilutions C. Bait treatments
B. Dust or spray D. None of the above

4. Quick-kill insecticides and baits will only kill the foraging ants, not allowing the foraging ants to take the bait back home to feed the queen, nest workers and brood.
A. TRUE B. FALSE

Key
5. The key to using baits is excess. Applied properly and using a fresh bait product, a broadcast application will give 50% to 60% control, rarely 70%.
A. TRUE B. FALSE

Carpenter Ant Infestations
6. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct moisture problems such as leaky roofs and plumbing. Paint and/or seal exposed wood construction before it becomes wet.
A. TRUE B. FALSE

Signs and Symptoms of Pesticide Poisoning
Recognizing Signs and Symptoms of Poisoning
7. Prompt action during pesticide overexposure will not prevent serious consequences. Poisoning signs cannot be seen by others, for example, vomiting, sweating, or pin-point pupils.
A. TRUE B. FALSE

Severe Symptoms
8. In a pesticide emergency, identify the pesticide to which the victim was exposed. Provide this information to medical authorities.
A. TRUE B. FALSE

9. Some of these poisoning symptoms may feel like a cold, flu, or heat exhaustion. Some people may have an allergic reaction to plants, fertilizers, or other chemicals used in agriculture. It is best to see a doctor if any of these symptoms are present.
A. TRUE B. FALSE

10. Recognize the signs and symptoms of pesticide poisoning for those pesticides you commonly use or to which you may be exposed. If you suspect a pesticide poisoning, get immediate help from a local hospital, physician, or the nearest poison control center.
A. TRUE B. FALSE

Topic 5 Wood Preservatives and Insecticides -10 Questions

Waterborne Preservatives

1. Water is the most common solvent carrier in _____due to its availability and low cost. Water-borne systems do however have the drawback that they swell timber, leading to increased twisting, splitting and checking than alternatives.

A. Permethrin
C. Solutions of waterborne preservatives
B. Preservative formulations
D. None of the above

Chromated Copper Arsenate (CCA)

2. Chromated copper arsenate or CCA, is a chemical preservative that protects wood from rotting due to insects and microbial agents. CCA contains_____.

A. Arsenic, chromium and copper
C. Wood preservations, insecticides, fungicides
B. Chemical preservatives
D. None of the above

Other Emulsions

Light Organic Solvent Preservatives (LOSP)

3. This class of timber treatments use white spirit, or light oils such as kerosene, as the solvent carrier to deliver preservative compounds into timber. _____are typically used as an insecticide, such as permethrin, bifenthrin or deltamethrin. The most common formulations use Permethrin as an insecticide, and Propaconazole and Tebuconazole as fungicides. While still using a chemical preservative, this formulation contains no heavy-metal compounds.

A. Solutions of waterborne preservatives
C. Salts
B. Synthetic pyrethroids
D. None of the above

New Technologies

Glass Fortified Wood

4. Glass Fortified Wood (glass wood) is lumber that has gone through a process that intermixes a non-_____ based formula throughout the wood fibers protecting the wood from fire, rot and insect damage.

A. Extractives
C. Toxic sodium silicate (water glass)
B. Polyphenols
D. None of the above

Natural Preservatives

Naturally Rot-Resistant Woods

5. _____ are chemicals that are deposited in the heartwood of certain tree species as they convert sapwood to heartwood.

A. Extractives
C. Toxic sodium silicate (water glass)
B. Polyphenols
D. None of the above

Heat Treatments

6. Heat treatment can also improve the properties of the wood with respect to water: lower equilibrium moisture, _____, and weather resistance.

A. Less moisture deformation
C. Necessary durability
B. Vacuum treatment
D. None of the above

Non-Pressure Processes

7. Non-pressure methods, in general, consist of (a) surface application of preservatives by brief dipping, (b) soaking in preservative oils or steeping in solutions of waterborne preservatives, (c) diffusion processes with waterborne preservatives, (d)_____, and (e) a variety of miscellaneous processes.

A. Less moisture deformation
C. Necessary durability
B. Vacuum treatment
D. None of the above

Brief Dipping

8. It is a common practice to treat window sash, frames, and other millwork, either before or after assembly, by dipping the item in a _____.

A. Diffusion process
C. Preservative penetration
B. Water-repellent preservative
D. None of the above

Cold Soaking and Steeping

9. The methods of cold soaking well-seasoned wood for several hours or days in low-viscosity preservative oils or steeping green or seasoned wood for several days in _____ have provided a range of success on fence posts, lumber, and timbers.

A. Waterborne preservatives
C. Water-repellent preservatives
B. Non-pressure methods
D. None of the above

Diffusion Processes

10. In addition to the steeping process, _____ are used with green or wet wood. These processes employ waterborne preservatives that will diffuse out of the water of the treating solution or paste into the water of the wood.

A. Diffusion processes
C. Preservative penetration and retention levels
B. Dip applications
D. None of the above

Topic 6 - Fungus and Wood Fungi Section -10 Questions

1. A fungus or fungi is a member of a large group of _____ organisms that includes microorganisms such as yeasts and molds, as well as the more familiar mushrooms.

A. Fungi
C. Eukaryotic
B. Prokaryotic
D. None of the above

Asexual Reproduction

2. The "_____" (fungi lacking the perfect or sexual stage) or Deuteromycota comprise all the species which lack an observable sexual cycle.

A. Some fungi
C. All fungi
B. Fungi imperfecti
D. None of the above

Preventing Rot

3. The key to preventing rot is to control the wood's exposure to moisture and to employ an effective prevention and treatment program. Most wood decay fungi grow only on wood with a high moisture content, usually _____ percent or above. Green (unseasoned) lumber is a prime target for decay fungi.

A. 50
C. 20
B. 40
D. None of the above

Decay Fungi

4. Decay fungi can cause severe structural damage to any wood member, even wood species such as redwood and cedar. All that is needed is a source of water in contact with the wood.

A. TRUE B. FALSE

Molds and Stains

5. Molds and stain fungi are sometimes mistaken for decay, and while they may discolor wood, they cause no structural wood damage. The presence of molds and stains, however, is a sign that conditions are favorable for decay fungi and a preventative treatment may be necessary.

A. TRUE B. FALSE

Brown Discoloration and a Crumbly Appearance

6. Although many _____ may grow for long periods without producing any external evidence of their presence, others produce "fruiting bodies" on the surface of decaying wood.

A. Decay fungi C. Fruiting bodies
B. Wood rots D. None of the above

Disease Cycle of Decays

7. First, decay occurs for many years, between the stages of _____and fruiting, and _____ may continue for many years.

A. Plasmogamy - Mildew(s) C. Spores - Mold(s)
B. Plasmogamy - Fruiting D. None of the above

Molds

8. Many people confuse the presence of _____ with decay fungi. Although molds are a form of fungi, they typically grow on the surface of wood and generally do not weaken the wood's strength.

A. Micro fungi C. Molds
B. Wood rot D. None of the above

Fungi Kingdom

9. Mold is the common name for many types of micro fungi. In order to grow, molds require food, suitable temperature (ideally between _____ degrees Fahrenheit), oxygen and moisture (Zabel, 1992). When these conditions are met, mold will grow and reproduce by creating spores that are released into the air.

A. 70 and 85 C. 80 and 100
B. 85 - 95 D. None of the above

Penetration and Retention

10. Penetration levels vary widely, even in pressure-treated material. In most species, heartwood is more difficult to penetrate than sapwood.

A. TRUE B. FALSE

Wood Destroyers Assignment #3
For Students Names M-Q

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 90 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 468-0675. 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.

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 Introduction to Wood - 10 Questions
(s) means the answer may be either plural or singular in nature.

Understanding Wood
1. Between the existing wood and the inner bark, of _____ which envelop the entire stem, living branches, and roots.
A. Sap-staining C. New woody layers
B. Earlywood D. None of the above

Growth Rings
2. If these seasons are annual these growth rings are referred to as annual rings. Where there is no seasonal difference growth rings are likely to be_____.
A. Sap-staining C. Indistinct or absent
B. Earlywood D. None of the above

3. It is usually lighter in color than that near the outer portion of the ring, and is known as earlywood or springwood. The outer portion formed later in the season is then known as the_____.
A. Earlywood C. Latewood or summerwood
B. Strength of wood D. None of the above

4. Where there are clear seasons, growth can occur in a discrete annual or _____, leading to growth rings; these can usually be most clearly seen on the end of a log, but are also visible on the other surfaces.
A. Protoplasmic contents C. Growth ring
B. Seasonal pattern D. None of the above

5. If there are differences within a growth ring, then the part of a growth ring nearest the center of the tree and formed early in the growing season when growth is rapid, is usually composed of _____.
A. Protoplasmic contents C. Wider elements
B. Spalting D. None of the above

6. The members of fungus beetles two orders develop by _____, advancing from eggs to larvae, pupae, and adults.
A. Incomplete metamorphis C. Complete metamorphis
B. Skipping metamorphis D. None of the above

7. Ants of the genus Camponotus often nest in wood. There are many different carpenter ant species, but only one poses a major pest problem, (the Black carpenter ant (Camponotus pennsylvanicus).
A. TRUE B. FALSE

8. The California laurel borer, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. TRUE B. FALSE

9. Paper birches are frequently attacked by the bronze birch borer. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the other borers
A. TRUE B. FALSE

10. Carpenter ants are among the largest species that you'll find. Like other ant species, carpenter ants are social, i.e., they live in a colony and have several "_____" or adult forms that perform different jobs in the colony.
A. Mud tubes C. Castes
B. Old house borer D. None of the above

Topic 2 Termite Introduction - 10 Questions

(s) means the answer may be either plural or singular in nature.

1. There are about 2,500 termite species in the world. North America has _____, termite species most in the southeast USA. Alaska is the only state without termites.
A. 400 C. 41
B. 75 D. None of the above

Feeding Habits
2. Subterranean termites feed mainly on wood and wood products containing cellulose. Termites have _____ in their intestine which provide enzymes to digest cellulose.
A. Mechanisms C. Enzymes
B. Protozoa (microorganisms) D. None of the above

Development of the Colony
3. After the first group of eggs has been laid, there is a period of several _____ before another group is laid. This process continues for several_____.
A. Days - Weeks C. Month - Years
B. Weeks - Months D. None of the above

Moisture

4. _____ to the survival of termites. Subterranean termites obtain most of their moisture from the soil. They maintain contact with the soil in order to survive.

A. Source of nitrogen is vital
C. Moisture is vital
B. Moisture is not vital
D. None of the above

Tolerances

5. They move underground through tunnels. Whenever the termites leave the confines of the soil or the wood in which they are feeding, they _____in which to move from the soil to the wood or the above-ground nest.

A. Build above-ground nests
C. Construct shelter tubes
B. Develop plans
D. None of the above

Subterranean Termites

6. When subterranean termites invade the wood of a structure that is separated from the soil by intervening concrete, masonry or other impervious material, they _____ over the surface to the wood.

A. Build above-ground nests
C. Construct shelter tubes
B. Develop plans
D. None of the above

Communication in the Colony

7. Termites primarily communicate via chemicals called_____. Each colony develops its own characteristic _____.

A. Attack - smell
C. Pheromones - odor
B. Pheromones -defense
D. None of the above

8. Any intruder is _____and an alarm pheromone is released that triggers the soldiers to attack the intruder.

A. Easily probed
C. Instantly recognized
B. Perceived
D. None of the above

Winged Termites

9. Large numbers of winged termites swarming from wood or the soil often are the first obvious sign of a nearby termite colony.

A. TRUE B. FALSE

Mud Tubes

10. Other signs of Termite(s) presence include mud tubes and mud protruding from cracks between boards and beams.

A. TRUE B. FALSE

Topic 3 - Ant Identification Section 1 Node - 10 Questions

1. Ants are beneficial organisms in the balance of nature. In nature, ants greatly reduce the amount of dead and decaying plant and animal organic matter. They also aerate the soil with their nests.

A. TRUE B. FALSE

2. Ant infestations are not easy to control and different strategies should be used depending on _____of the ants.

A. Active nests
C. Nest location and food preferences
B. Infestations
D. None of the above

3. The head has two strong jaws, the mandibles, used to carry food, manipulate objects, construct nests, and for defense. In some species, a small pocket (_____) inside the mouth stores food, so it may be passed to other ants or their larvae.
A. Storage structures C. Infrabuccal chamber
B. Mesosoma ("thorax") D. None of the above

4. Both the _____of the ant are attached to the thorax. The legs terminate in a hooked claw which allows them to hook on and climb surfaces.
A. Reproductive structures C. Arms and wings
B. Legs and wings D. None of the above

5. Workers of many species have their egg-laying structures modified into _____that are used for subduing prey and defending their nests.
A. Egg-laying structures C. Stinger(s)
B. Excretory systems D. None of the above

Carpenter Ants - 1 Node ant – Wood Destroyer
6. Carpenter ants are large (about 3/8” to 1/2" long) and black or red. Carpenter ants are usually smaller than most other house- infesting ants. They vary in color from a dull black or reddish yellow color to a combination of black and dull red or reddish-orange. Soldier ants range in size from 5/16 to 7/16 inches long.
A. TRUE B. FALSE

7. Treatment options include use of a _____applied as a dust or spray to the nest.
A. Insecticide dilutions C. Bait or residual contact insecticide
B. Dust or spray D. None of the above

8. Carpenter ants tunnel into wood to form nest galleries. If they go unnoticed for several years, they may cause structural damage. Outdoors, the ants use dead trees or tree limbs, stumps, logs or areas under stones as nesting sites.
A. TRUE B. FALSE

9. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct _____such as leaky roofs and plumbing.
A. Moisture problems C. Electrical outlets
B. Wall voids D. None of the above

10. If it is difficult to locate the nest, a(n) _____can be applied into wall voids through electrical outlets.
A. Insecticide dilutions C. Spray product
B. Insecticidal dust D. None of the above

Topic 4 - 2 Node Ant Identification and Control Section - 10 Questions
1. Most retail products are _____ containing hydramethylnon, sulfluramid, abamectin, or boric acid.
A. Insecticide dilutions C. Liquid or granular formulations
B. Dust or spray D. None of the above

2. Which of the following and insecticides can be used to control ants in the outside nest?
A. Insecticide dilutions C. Bait treatments
B. Cellose D. None of the above

3. Which of the following can be used outside to successfully drench ant nests? Be sure to follow label recommendations for correct procedures when applying the insecticide.
A. Insecticide dilutions C. Bait treatments
B. Dust or spray D. None of the above

4. When possible, remove wood that contains carpenter ant nests, or destroy the colony. When this is not practical, and carpenter ants have been discovered entering your home from outdoor nests, a treatment with a _____ around the building's exterior helps keep them out of your home.
A. Insecticide dilutions C. Non-residual insecticide
B. Residual insecticide D. None of the above

5. Which of the following missing terms, covering the foundation and under the lower edge of the siding to help keep ants from coming inside?
A. Insecticide formula C. Spray the product in a band
B. Dust in a circle D. None of the above

Key
6. The key to using baits is excess. Applied properly and using a fresh bait product, a broadcast application will give 50% to 60% control, rarely 70%.
A. TRUE B. FALSE

Carpenter Ant Infestations
7. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct moisture problems such as leaky roofs and plumbing. Paint and/or seal exposed wood construction before it becomes wet.
A. TRUE B. FALSE

Signs and Symptoms of Pesticide Poisoning
Recognizing Signs and Symptoms of Poisoning
8. Anyone who may become exposed to pesticides should be aware of the signs and symptoms of pesticide poisoning.
A. TRUE B. FALSE

9. Prompt action during pesticide overexposure will not prevent serious consequences. Poisoning signs cannot be seen by others, for example, vomiting, sweating, or pin-point pupils.
A. TRUE B. FALSE

Severe Symptoms
10. In a pesticide emergency, identify the pesticide to which the victim was exposed. Provide this information to medical authorities.
A. TRUE B. FALSE

Topic 5 Wood Preservatives and Insecticides -10 Questions

Chromated Copper Arsenate (CCA)

1. EPA has classified CCA as a _____, for use only by certified pesticide applicators.

A. Co-biocide
B. Restricted use product
C. Chemical preservative
D. None of the above

Chemical Preservatives

2. Before a wood preservative can be approved for pressure treatment of structural members, it must be evaluated to ensure that it provides the necessary durability and that it does not greatly reduce the strength properties of the wood.

A. TRUE B. FALSE

Waterborne Preservatives

3. Copper is the _____in many wood preservative formulations used in ground contact because of its excellent fungicidal properties and low mammalian toxicity.

A. Co-biocide
B. Unrestricted use product
C. Primary biocide
D. None of the above

Pressure Treatment Process

4. In the pressure treatment process, an aqueous solution of CCA is applied using a vacuum and pressure cycle, and the treated wood is then stacked to dry. During the process, the mixture of oxides reacts to form insoluble compounds, helping with _____problems.

A. Heat treatment
B. Leaching
C. Salts
D. None of the above

Naphthenates

5. Naphthenates are _____ and have industrial applications including synthetic detergents, lubricants, corrosion inhibitors, fuel and lubricating oil additives, wood preservations, insecticides, fungicides, acaricides, wetting agents, and oil drying agents used in painting and wood surface treatment.

A. Solutions of waterborne preservatives
B. Synthetic pyrethroids
C. Salts
D. None of the above

New Technologies
Glass Fortified Wood

6. Glass Fortified Wood (glass wood) is lumber that has gone through a process that intermixes a non-_____ based formula throughout the wood fibers protecting the wood from fire, rot and insect damage.

A. Extractives
B. Polyphenols
C. Toxic sodium silicate (water glass)
D. None of the above

Natural Preservatives
Naturally Rot-Resistant Woods

7. These species are resistant to decay in their natural state, due to high levels of organic chemicals called extractives, mainly_____.

A. Extractives
B. Polyphenols
C. Toxic sodium silicate (water glass)
D. None of the above

Brief Dipping

8. It is a common practice to treat window sash, frames, and other millwork, either before or after assembly, by dipping the item in a _____.

A. Diffusion process
B. Water-repellent preservative
C. Preservative penetration
D. None of the above

9. _____ provide very limited protection to wood used in contact with the ground or under very moist conditions, and they provide very limited protection against attack by termites. However, they do have value for exterior woodwork and millwork that is painted, not in contact with the ground, and exposed to moisture only for brief periods.

A. Diffusion processes
B. Water-repellent preservatives
C. Dip applications
D. None of the above

Cold Soaking and Steeping

10. The methods of cold soaking well-seasoned wood for several hours or days in low-viscosity preservative oils or steeping green or seasoned wood for several days in _____ have provided a range of success on fence posts, lumber, and timbers.

A. Waterborne preservatives
B. Non-pressure methods
C. Water-repellent preservatives
D. None of the above

Topic 6 - Fungus and Wood Fungi Section -10 Questions

1. A fungus or fungi is a member of a large group of _____ organisms that includes microorganisms such as yeasts and molds, as well as the more familiar mushrooms.

A. Fungi
B. Prokaryotic
C. Eukaryotic
D. None of the above

Reproduction

2. Fungal reproduction is complex, reflecting the differences in lifestyles and genetic makeup within this kingdom of organisms. It is estimated that a third of _____reproduce by different modes of propagation; for example, reproduction may occur in two well-differentiated stages within the life cycle of a species, the teleomorph and the anamorph.

A. Some fungi
B. Fungi imperfecti
C. All fungi
D. None of the above

Asexual Reproduction

3. The "_____" (fungi lacking the perfect or sexual stage) or Deuteromycota comprise all the species which lack an observable sexual cycle.

A. Some fungi
B. Fungi imperfecti
C. All fungi
D. None of the above

Preventing Rot

4. The key to preventing rot is to control the wood's exposure to moisture and to employ an effective prevention and treatment program. Most wood decay fungi grow only on wood with a high moisture content, usually _____ percent or above. Green (unseasoned) lumber is a prime target for decay fungi.

A. 50
B. 40
C. 20
D. None of the above

Decay Fungi

5. Decay fungi can cause severe structural damage to any wood member, even wood species such as redwood and cedar. All that is needed is a source of water in contact with the wood.

A. TRUE B. FALSE

Molds and Stains

6. Molds and stain fungi are sometimes mistaken for decay, and while they may discolor wood, they cause no structural wood damage. The presence of molds and stains, however, is a sign that conditions are favorable for decay fungi and a preventative treatment may be necessary.

A. TRUE B. FALSE

Brown Discoloration and a Crumbly Appearance

7. Although many _____ may grow for long periods without producing any external evidence of their presence, others produce "fruiting bodies" on the surface of decaying wood.

A. Decay fungi C. Fruiting bodies
B. Wood rots D. None of the above

Treatment of Wood Infested by Decay and/or Wood

8. Since wood can contain active beetle larvae or _____ with no surface evidence of infestation, the best method of control is to treat the entire area where an infestation has been found. This would include all of the wood in a crawl space, wall or attic showing any signs of damage.

A. Plasmogamy C. Fruiting
B. Fungal spore(s) D. None of the above

Molds

9. Many people confuse the presence of _____ with decay fungi. Although molds are a form of fungi, they typically grow on the surface of wood and generally do not weaken the wood's strength.

A. Micro fungi C. Molds
B. Wood rot D. None of the above

Fungi Kingdom

10. Mold is the common name for many types of micro fungi. In order to grow, molds require food, suitable temperature (ideally between _____ degrees Fahrenheit), oxygen and moisture. When these conditions are met, mold will grow and reproduce by creating spores that are released into the air.

A. 70 and 85 C. 80 and 100
B. 85 - 95 D. None of the above

Wood Destroyers Assignment #4
For Students Names R-Z

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 90 %. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 468-0675. 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.

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 Introduction to Wood - 10 Questions
(s) means the answer may be either plural or singular in nature.

Understanding Wood
1. Between the existing wood and the inner bark, of _____ which envelop the entire stem, living branches, and roots.
A. Sap-staining C. New woody layers
B. Earlywood D. None of the above

Growth Rings
2. If these seasons are annual these growth rings are referred to as annual rings. Where there is no seasonal difference growth rings are likely to be_____.
A. Sap-staining C. Indistinct or absent
B. Earlywood D. None of the above

3. Where there are clear seasons, growth can occur in a discrete annual or _____, leading to growth rings; these can usually be most clearly seen on the end of a log, but are also visible on the other surfaces.
A. Protoplasmic contents C. Growth ring
B. Seasonal pattern D. None of the above

4. If there are differences within a growth ring, then the part of a growth ring nearest the center of the tree and formed early in the growing season when growth is rapid, is usually composed of _____.
A. Protoplasmic contents C. Wider elements
B. Spalting D. None of the above

5. It is usually lighter in color than that near the outer portion of the ring, and is known as earlywood or springwood. The outer portion formed later in the season is then known as the_____.
A. Earlywood C. Latewood or summerwood
B. Strength of wood D. None of the above

6. The members of fungus beetles two orders develop by _____, advancing from eggs to larvae, pupae, and adults.
A. Incomplete metamorphis C. Complete metamorphis
B. Skipping metamorphis D. None of the above

7. The California laurel borer, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. TRUE B. FALSE

8. Paper birches are frequently attacked by the bronze birch borer. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the other borers
A. TRUE B. FALSE

9. Ants of the genus Camponotus often nest in wood. There are many different carpenter ant species, but only one poses a major pest problem, (the Black carpenter ant (Camponotus pennsylvanicus).
A. TRUE B. FALSE

10. Carpenter ants are among the largest species that you'll find. Like other ant species, carpenter ants are social, i.e., they live in a colony and have several "_____" or adult forms that perform different jobs in the colony.
A. Mud tubes C. Castes
B. Old house borer D. None of the above

Topic 2 Termite Introduction - 10 Questions

(s) means the answer may be either plural or singular in nature.

Feeding Habits
1. Subterranean termites feed mainly on wood and wood products containing cellulose. Termites have _____ in their intestine which provide enzymes to digest cellulose.
A. Mechanisms C. Enzymes
B. Protozoa (microorganisms) D. None of the above

Development of the Colony
2. After the first group of eggs has been laid, there is a period of several _____ before another group is laid. This process continues for several_____.
A. Days - Weeks C. Month - Years
B. Weeks - Months D. None of the above

Fungi
3. Fungi also play a role in _____. Certain wood decay fungi are highly attractive to termites.
A. Termite nutrition C. Finding a new structure
B. Cellulose for their nutrition D. None of the above

Moisture

4. _____ to the survival of termites. Subterranean termites obtain most of their moisture from the soil. They maintain contact with the soil in order to survive.

A. Source of nitrogen is vital
C. Moisture is vital
B. Moisture is not vital
D. None of the above

Tolerances

5. Termites have very little tolerance to_____, or extremes of hot and cold. But they often must forage far, sometimes above ground, from their initial workings to find food.

A. Pesticides
C. Wet conditions
B. Dry conditions
D. None of the above

Subterranean Termites

6. When subterranean termites invade the wood of a structure that is separated from the soil by intervening concrete, masonry or other impervious material, they _____ over the surface to the wood.

A. Build above-ground nests
C. Construct shelter tubes
B. Develop plans
D. None of the above

Castles

7. Under certain conditions a fourth type of tube is constructed. Called swarming tubes or swarming "castles" they are constructed as flight platforms for swarmers and they have many turret-like projects and _____that vaguely resemble castle towers.

A. Flattened vertical branches
C. Flattened horizontal branches
B. Extend the damage
D. None of the above

Severe Damage

8. Severe damage by subterranean termites is not likely to occur in the first 2 or 3 years after construction.

A. TRUE
B. FALSE

Communication in the Colony

9. Termites primarily communicate via chemicals called_____. Each colony develops its own characteristic _____.

A. Attack - smell
C. Pheromones - odor
B. Pheromones -defense
D. None of the above

Winged Termites

10. Large numbers of winged termites swarming from wood or the soil often are the first obvious sign of a nearby termite colony.

A. TRUE
B. FALSE

Topic 3 - Ant Identification Section 1 Node - 10 Questions

1. Ants can be controlled with a combination of good sanitation, removing _____, caulking entry points, and eliminating active nests.

A. Active nests
C. Pheromone trails
B. Ant infestations
D. None of the above

2. Ant infestations are not easy to control and different strategies should be used depending on _____of the ants.
A. Active nests C. Nest location and food preferences
B. Infestations D. None of the above

3. The head has two strong jaws, the mandibles, used to carry food, manipulate objects, construct nests, and for defense. In some species, a small pocket (_____) inside the mouth stores food, so it may be passed to other ants or their larvae.
A. Storage structures C. Infrabuccal chamber
B. Mesosoma ("thorax") D. None of the above

Carpenter Ants - 1 Node ant – Wood Destroyer
4. Carpenter ants are large (about 3/8" to 1/2" long) and black or red. Carpenter ants are usually smaller than most other house- infesting ants. They vary in color from a dull black or reddish yellow color to a combination of black and dull red or reddish-orange. Soldier ants range in size from 5/16 to 7/16 inches long.
A. TRUE B. FALSE

5. Treatment options include use of a _____applied as a dust or spray to the nest.
A. Insecticide dilutions C. Bait or residual contact insecticide
B. Dust or spray D. None of the above

6. Carpenter ants are least active in the evening hours, foraging for all kinds of food, outside. By following the ants, you will never be able to tell where the nest is.
A. TRUE B. FALSE

7. Because carpenter ants keep the _____very clean and push the sawdust and dead insect parts out small holes in the wood, a small, fresh pile of sawdust under the nest timber is the usual sign of an active carpenter ant nest.
A. Nest galleries C. Tunneled galleries
B. Wall voids D. None of the above

8. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct _____such as leaky roofs and plumbing.
A. Moisture problems C. Electrical outlets
B. Wall voids D. None of the above

9. If it is difficult to locate the nest, a(n) _____can be applied into wall voids through electrical outlets.
A. Insecticide dilutions C. Spray product
B. Insecticidal dust D. None of the above

10. Nests are often concealed in wall voids, ceilings, subfloors, attics, or hollow doors. It is usually necessary for a professional pest control applicator to drill small (about 1/8 inch) holes and apply an insecticidal dust into the nest area. It is best to determine the nest's location as specifically as possible.
A. TRUE B. FALSE

Topic 4 - 2 Node Ant Identification and Control Section - 10 Questions

1. Which of the following and insecticides can be used to control ants in the outside nest?
A. Insecticide dilutions C. Bait treatments
B. Cellose D. None of the above

2. Which of the following can be used outside to successfully drench ant nests? Be sure to follow label recommendations for correct procedures when applying the insecticide.
A. Insecticide dilutions C. Bait treatments
B. Dust or spray D. None of the above

3. Which of the following missing terms, covering the foundation and under the lower edge of the siding to help keep ants from coming inside?
A. Insecticide formula C. Spray the product in a band
B. Dust in a circle D. None of the above

4. Chemical Control. Ants can be controlled with baits, crack and crevice treatments, indoor space and surface treatments, outdoor barrier and broadcast treatments, as well as void and attic treatments.
A. TRUE B. FALSE

5. Since ants do not rely on trophallaxis, the bait toxicant cannot be thoroughly distributed to the members of the colony, including the queen and brood.
A. TRUE B. FALSE

6. Quick-kill insecticides and baits will only kill the foraging ants, not allowing the foraging ants to take the bait back home to feed the queen, nest workers and brood.
A. TRUE B. FALSE

Carpenter Ant Infestations
7. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct moisture problems such as leaky roofs and plumbing. Paint and/or seal exposed wood construction before it becomes wet.
A. TRUE B. FALSE

Signs and Symptoms of Pesticide Poisoning
Recognizing Signs and Symptoms of Poisoning
8. Anyone who may become exposed to pesticides should be aware of the signs and symptoms of pesticide poisoning.
A. TRUE B. FALSE

9. Prompt action during pesticide overexposure will not prevent serious consequences. Poisoning signs cannot be seen by others, for example, vomiting, sweating, or pin-point pupils.
A. TRUE B. FALSE

Severe Symptoms
10. Recognize the signs and symptoms of pesticide poisoning for those pesticides you commonly use or to which you may be exposed. If you suspect a pesticide poisoning, get immediate help from a local hospital, physician, or the nearest poison control center.
A. TRUE B. FALSE

Topic 5 Wood Preservatives and Insecticides -10 Questions

Chemical Preservatives
1. Before a wood preservative can be approved for pressure treatment of structural members, it must be evaluated to ensure that it provides the necessary durability and that it does not greatly reduce the strength properties of the wood.
A. TRUE B. FALSE

Waterborne Preservatives
2. Copper is the _____in many wood preservative formulations used in ground contact because of its excellent fungicidal properties and low mammalian toxicity.
A. Co-biocide C. Primary biocide
B. Unrestricted use product D. None of the above

Chromated Copper Arsenate (CCA)
3. Chromated copper arsenate or CCA, is a chemical preservative that protects wood from rotting due to insects and microbial agents. CCA contains_____.
A. Arsenic, chromium and copper C. Wood preservations, insecticides, fungicides
B. Chemical preservatives D. None of the above

Pressure Treatment Process
4. In the pressure treatment process, an aqueous solution of CCA is applied using a vacuum and pressure cycle, and the treated wood is then stacked to dry. During the process, the mixture of oxides reacts to form insoluble compounds, helping with _____problems.
A. Heat treatment C. Salts
B. Leaching D. None of the above

Naphthenates
5. Naphthenates are _____ and have industrial applications including synthetic detergents, lubricants, corrosion inhibitors, fuel and lubricating oil additives, wood preservations, insecticides, fungicides, acaricides, wetting agents, and oil drying agents used in painting and wood surface treatment.
A. Solutions of waterborne preservatives C. Salts
B. Synthetic pyrethroids D. None of the above

New Technologies
Glass Fortified Wood
6. Glass Fortified Wood (glass wood) is lumber that has gone through a process that intermixes a non-_____ based formula throughout the wood fibers protecting the wood from fire, rot and insect damage.
A. Extractives C. Toxic sodium silicate (water glass)
B. Polyphenols D. None of the above

Natural Preservatives
Naturally Rot-Resistant Woods
7. These species are resistant to decay in their natural state, due to high levels of organic chemicals called extractives, mainly_____.
A. Extractives C. Toxic sodium silicate (water glass)
B. Polyphenols D. None of the above

Heat Treatments
8. Heat treatment can also improve the properties of the wood with respect to water: lower equilibrium moisture, _____, and weather resistance.
A. Less moisture deformation C. Necessary durability
B. Vacuum treatment D. None of the above

Non-Pressure Processes
9. Non-pressure methods, in general, consist of (a) surface application of preservatives by brief dipping, (b) soaking in preservative oils or steeping in solutions of waterborne preservatives, (c) diffusion processes with waterborne preservatives, (d)_____, and (e) a variety of miscellaneous processes.
A. Less moisture deformation C. Necessary durability
B. Vacuum treatment D. None of the above

Cold Soaking and Steeping
10. The methods of cold soaking well-seasoned wood for several hours or days in low-viscosity preservative oils or steeping green or seasoned wood for several days in _____ have provided a range of success on fence posts, lumber, and timbers.
A. Waterborne preservatives C. Water-repellent preservatives
B. Non-pressure methods D. None of the above

Topic 6 - Fungus and Wood Fungi Section -10 Questions

Reproduction
1. Fungal reproduction is complex, reflecting the differences in lifestyles and genetic makeup within this kingdom of organisms. It is estimated that a third of _____reproduce by different modes of propagation; for example, reproduction may occur in two well-differentiated stages within the life cycle of a species, the teleomorph and the anamorph.
A. Some fungi C. All fungi
B. Fungi imperfecti D. None of the above

Asexual Reproduction
2. The "_____" (fungi lacking the perfect or sexual stage) or Deuteromycota comprise all the species which lack an observable sexual cycle.
A. Some fungi C. All fungi
B. Fungi imperfecti D. None of the above

Preventing Rot

3. The key to preventing rot is to control the wood's exposure to moisture and to employ an effective prevention and treatment program. Most wood decay fungi grow only on wood with a high moisture content, usually _____ percent or above. Green (unseasoned) lumber is a prime target for decay fungi.

A. 50 C. 20
B. 40 D. None of the above

Decay Fungi

4. Decay fungi can cause severe structural damage to any wood member, even wood species such as redwood and cedar. All that is needed is a source of water in contact with the wood.

A. TRUE B. FALSE

Brown Discoloration and a Crumbly Appearance

5. In one type of rot, the decayed area has a brown discoloration and a crumbly appearance. It usually breaks up into variously-sized cubes, giving rise to the name "_____ ." Another type of rot results in a white or yellow discoloration, with the decayed wood being "stringy" or "spongy."

A. Mildew rot C. Red rot
B. Brown cubical rot D. None of the above

Stain Fungi

6. Surface molds, "_____," and stain fungi are often found growing on the surface of damp wood and can be confused with decay fungi.

A. Mildew(s) C. Mold(s)
B. Fungal spore(s) D. None of the above

Disease Cycle of Decays

7. First, decay occurs for many years, between the stages of _____and fruiting, and _____ may continue for many years.

A. Plasmogamy - Mildew(s) C. Spores - Mold(s)
B. Plasmogamy - Fruiting D. None of the above

Treatment of Wood Infested by Decay and/or Wood

8. Since wood can contain active beetle larvae or _____ with no surface evidence of infestation, the best method of control is to treat the entire area where an infestation has been found. This would include all of the wood in a crawl space, wall or attic showing any signs of damage.

A. Plasmogamy C. Fruiting
B. Fungal spore(s) D. None of the above

Molds

9. Many people confuse the presence of _____ with decay fungi. Although molds are a form of fungi, they typically grow on the surface of wood and generally do not weaken the wood's strength.

A. Micro fungi C. Molds
B. Wood rot D. None of the above

Fungi Kingdom

10. Mold is the common name for many types of micro fungi. In order to grow, molds require food, suitable temperature (ideally between _____ degrees Fahrenheit), oxygen and moisture.

A. 70 and 85
B. 85 - 95
C. 80 and 100
D. None of the above

When Finished with Your Assignment

REQUIRED DOCUMENTS

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

IPhone Scanning Instructions

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

FAX

If you are unable to scan and email, please fax these to TLC, if you fax, call to confirm that we received your paperwork. **(928) 468-0675**

Wood Destroyers Assignment #5
For Repeat Students

You will have 90 days from the start of this course to have successfully passed this assignment with a score of 90%. You may e mail the answers to TLC, info@tlch2o.com or fax the answers to TLC, (928) 468-0675. 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.

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 Introduction to Wood - 10 Questions
(s) means the answer may be either plural or singular in nature.

1. If these seasons are annual these growth rings are referred to as annual rings. Where there is no seasonal difference growth rings are likely to be_____.
A. Sap-staining C. Indistinct or absent
B. Earlywood D. None of the above

2. Between the existing wood and the inner bark, of _____ which envelop the entire stem, living branches, and roots.
A. Sap-staining C. New woody layers
B. Earlywood D. None of the above

3. Where there are clear seasons, growth can occur in a discrete annual or _____, leading to growth rings; these can usually be most clearly seen on the end of a log, but are also visible on the other surfaces.
A. Protoplasmic contents C. Growth ring
B. Seasonal pattern D. None of the above

4. If there are differences within a growth ring, then the part of a growth ring nearest the center of the tree and formed early in the growing season when growth is rapid, is usually composed of _____.
A. Protoplasmic contents C. Wider elements
B. Spalting D. None of the above

5. It is usually lighter in color than that near the outer portion of the ring, and is known as earlywood or springwood. The outer portion formed later in the season is then known as the_____.
A. Earlywood C. Latewood or summerwood
B. Strength of wood D. None of the above

6. The members of fungus beetles two orders develop by _____, advancing from eggs to larvae, pupae, and adults.
A. Incomplete metamorophis C. Complete metamorophis
B. Skipping metamorophis D. None of the above

7. Ants of the genus Camponotus often nest in wood. There are many different carpenter ant species, but only one poses a major pest problem, (the Black carpenter ant (Camponotus pennsylvanicus).
A. TRUE B. FALSE

8. Carpenter ants are among the largest species that you'll find. Like other ant species, carpenter ants are social, i.e., they live in a colony and have several "_____" or adult forms that perform different jobs in the colony.
A. Mud tubes C. Castes
B. Old house borer D. None of the above

9. Paper birches are frequently attacked by the bronze birch borer. Adults emerge in June and lay eggs in July. Note they have shorter antennae and a different shape than the other borers
A. TRUE B. FALSE

10. The California laurel borer, mines in dead ash, laurel, and willow. It is not a threat to healthy trees.
A. TRUE B. FALSE

Topic 2 Termite Introduction - 10 Questions

(s) means the answer may be either plural or singular in nature.

Termite Reproduction
1. The female assumes a "calling" position with her abdomen elevated at a right angle to the rest of her body. She releases a _____which attracts nearby males. Once a male encounters a calling female, she moves off.
A. Odor C. Chemical messenger (pheromone)
B. Tap D. None of the above

Development of the Colony
2. After the first group of eggs has been laid, there is a period of several _____ before another group is laid. This process continues for several_____.
A. Days - Weeks C. Month - Years
B. Weeks - Months D. None of the above

Fungi
3. Fungi also play a role in _____. Certain wood decay fungi are highly attractive to termites.
A. Termite nutrition C. Finding a new structure
B. Cellulose for their nutrition D. None of the above

Moisture
4. _____ to the survival of termites. Subterranean termites obtain most of their moisture from the soil. They maintain contact with the soil in order to survive.
A. Source of nitrogen is vital C. Moisture is vital
B. Moisture is not vital D. None of the above

Tolerances
5. They move underground through tunnels. Whenever the termites leave the confines of the soil or the wood in which they are feeding, they _____in which to move from the soil to the wood or the above-ground nest.
A. Build above-ground nests C. Construct shelter tubes
B. Develop plans D. None of the above

Subterranean Termites
6. When subterranean termites invade the wood of a structure that is separated from the soil by intervening concrete, masonry or other impervious material, they _____ over the surface to the wood.
A. Build above-ground nests C. Construct shelter tubes
B. Develop plans D. None of the above

Castles
7. Under certain conditions a fourth type of tube is constructed. Called swarming tubes or swarming "castles" they are constructed as flight platforms for swarmers and they have many turret-like projects and _____that vaguely resemble castle towers.
A. Flattened vertical branches C. Flattened horizontal branches
B. Extend the damage D. None of the above

Communication in the Colony
8. Termites primarily communicate via chemicals called_____. Each colony develops its own characteristic _____.
A. Attack - smell C. Pheromones - odor
B. Pheromones -defense D. None of the above

Look for these signs of termite feeding:
9. Wood that sounds _____ when it is tapped with the handle of a screwdriver.
A. Hollow C. Like a liquid
B. Like a ripe watermelon D. None of the above

Mud Tubes
10. Other signs of Termite(s) presence include mud tubes and mud protruding from cracks between boards and beams.
A. TRUE B. FALSE

Topic 3 - Ant Identification Section 1 Node - 10 Questions

1. Ants are beneficial organisms in the balance of nature. In nature, ants greatly reduce the amount of dead and decaying plant and animal organic matter. They also aerate the soil with their nests.
A. TRUE B. FALSE

2. Ants can be controlled with a combination of good sanitation, removing _____, caulking entry points, and eliminating active nests.
A. Active nests C. Pheromone trails
B. Ant infestations D. None of the above

3. Insecticide sprays and baits can be used to kill foraging ants and destroy nests, but strategies designed to prevent further infestations should be used in conjunction with chemical treatment.
A. TRUE B. FALSE

4. Both the _____of the ant are attached to the thorax. The legs terminate in a hooked claw which allows them to hook on and climb surfaces.
A. Reproductive structures C. Arms and wings
B. Legs and wings D. None of the above

5. Workers of many species have their egg-laying structures modified into _____that are used for subduing prey and defending their nests.
A. Egg-laying structures C. Stinger(s)
B. Excretory systems D. None of the above

Carpenter Ants - 1 Node ant – Wood Destroyer
6. Carpenter ants are large (about 3/8” to 1/2" long) and black or red. Carpenter ants are usually smaller than most other house- infesting ants. They vary in color from a dull black or reddish yellow color to a combination of black and dull red or reddish-orange. Soldier ants range in size from 5/16 to 7/16 inches long.
A. TRUE B. FALSE

7. Carpenter ants tunnel into wood to form nest galleries. If they go unnoticed for several years, they may cause structural damage. Outdoors, the ants use dead trees or tree limbs, stumps, logs or areas under stones as nesting sites.
A. TRUE B. FALSE

8. Because carpenter ants keep the _____very clean and push the sawdust and dead insect parts out small holes in the wood, a small, fresh pile of sawdust under the nest timber is the usual sign of an active carpenter ant nest.
A. Nest galleries C. Tunneled galleries
B. Wall voids D. None of the above

9. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct _____such as leaky roofs and plumbing.
A. Moisture problems C. Electrical outlets
B. Wall voids D. None of the above

10. If it is difficult to locate the nest, a(n) _____can be applied into wall voids through electrical outlets.
A. Insecticide dilutions C. Spray product
B. Insecticidal dust D. None of the above

Topic 4 - 2 Node Ant Identification and Control Section - 10 Questions

1. Which of the following and insecticides can be used to control ants in the outside nest?
A. Insecticide dilutions C. Bait treatments
B. Cellose D. None of the above

2. Which of the following can be used outside to successfully drench ant nests? Be sure to follow label recommendations for correct procedures when applying the insecticide.
A. Insecticide dilutions C. Bait treatments
B. Dust or spray D. None of the above

3. Most retail products are _____ containing hydramethylnon, sulfluramid, abamectin, or boric acid.
A. Insecticide dilutions C. Liquid or granular formulations
B. Dust or spray D. None of the above

4. When possible, remove wood that contains carpenter ant nests, or destroy the colony. When this is not practical, and carpenter ants have been discovered entering your home from outdoor nests, a treatment with a _____ around the building's exterior helps keep them out of your home.
A. Insecticide dilutions C. Non-residual insecticide
B. Residual insecticide D. None of the above

5. Which of the following missing terms, covering the foundation and under the lower edge of the siding to help keep ants from coming inside?
A. Insecticide formula C. Spray the product in a band
B. Dust in a circle D. None of the above

6. Chemical Control. Ants can be controlled with baits, crack and crevice treatments, indoor space and surface treatments, outdoor barrier and broadcast treatments, as well as void and attic treatments.
A. TRUE B. FALSE

Key
7. The key to using baits is excess. Applied properly and using a fresh bait product, a broadcast application will give 50% to 60% control, rarely 70%.
A. TRUE B. FALSE

Carpenter Ant Infestations
8. To prevent further carpenter ant infestations, trim all trees and bushes so branches do not touch the house and correct moisture problems such as leaky roofs and plumbing. Paint and/or seal exposed wood construction before it becomes wet.
A. TRUE B. FALSE

Signs and Symptoms of Pesticide Poisoning
Recognizing Signs and Symptoms of Poisoning
9. Prompt action during pesticide overexposure will not prevent serious consequences. Poisoning signs cannot be seen by others, for example, vomiting, sweating, or pin-point pupils.
A. TRUE B. FALSE

Severe Symptoms
10. Some of these poisoning symptoms may feel like a cold, flu, or heat exhaustion. Some people may have an allergic reaction to plants, fertilizers, or other chemicals used in agriculture. It is best to see a doctor if any of these symptoms are present.
A. TRUE B. FALSE

Topic 5 Wood Preservatives and Insecticides -10 Questions

Pressure Treatment Process

1. In the pressure treatment process, an aqueous solution of CCA is applied using a vacuum and pressure cycle, and the treated wood is then stacked to dry. During the process, the mixture of oxides reacts to form insoluble compounds, helping with _____problems.

A. Heat treatment C. Salts
B. Leaching D. None of the above

Naphthenates

2. Naphthenates are _____ and have industrial applications including synthetic detergents, lubricants, corrosion inhibitors, fuel and lubricating oil additives, wood preservations, insecticides, fungicides, acaricides, wetting agents, and oil drying agents used in painting and wood surface treatment.

A. Solutions of waterborne preservatives C. Salts
B. Synthetic pyrethroids D. None of the above

Other Emulsions
Light Organic Solvent Preservatives (LOSP)

3. This class of timber treatments use white spirit, or light oils such as kerosene, as the solvent carrier to deliver preservative compounds into timber. _____are typically used as an insecticide, such as permethrin, bifenthrin or deltamethrin. The most common formulations use Permethrin as an insecticide, and Propaconazole and Tebuconazole as fungicides. While still using a chemical preservative, this formulation contains no heavy-metal compounds.

A. Solutions of waterborne preservatives C. Salts
B. Synthetic pyrethroids D. None of the above

New Technologies
Glass Fortified Wood

4. Glass Fortified Wood (glass wood) is lumber that has gone through a process that intermixes a non-_____ based formula throughout the wood fibers protecting the wood from fire, rot and insect damage.

A. Extractives C. Toxic sodium silicate (water glass)
B. Polyphenols D. None of the above

Natural Preservatives
Naturally Rot-Resistant Woods

5. These species are resistant to decay in their natural state, due to high levels of organic chemicals called extractives, mainly_____.

A. Extractives C. Toxic sodium silicate (water glass)
B. Polyphenols D. None of the above

Heat Treatments

6. Heat treatment can also improve the properties of the wood with respect to water: lower equilibrium moisture, _____, and weather resistance.

A. Less moisture deformation C. Necessary durability
B. Vacuum treatment D. None of the above

Non-Pressure Processes

7. Non-pressure methods, in general, consist of (a) surface application of preservatives by brief dipping, (b) soaking in preservative oils or steeping in solutions of waterborne preservatives, (c) diffusion processes with waterborne preservatives, (d)_____, and (e) a variety of miscellaneous processes.

A. Less moisture deformation
C. Necessary durability
B. Vacuum treatment
D. None of the above

Brief Dipping

8. _____ provide very limited protection to wood used in contact with the ground or under very moist conditions, and they provide very limited protection against attack by termites. However, they do have value for exterior woodwork and millwork that is painted, not in contact with the ground, and exposed to moisture only for brief periods.

A. Diffusion processes
C. Dip applications
B. Water-repellent preservatives
D. None of the above

Cold Soaking and Steeping

9. The methods of cold soaking well-seasoned wood for several hours or days in low-viscosity preservative oils or steeping green or seasoned wood for several days in _____ have provided a range of success on fence posts, lumber, and timbers.

A. Waterborne preservatives
C. Water-repellent preservatives
B. Non-pressure methods
D. None of the above

Diffusion Processes

10. In addition to the steeping process, _____ are used with green or wet wood. These processes employ waterborne preservatives that will diffuse out of the water of the treating solution or paste into the water of the wood.

A. Diffusion processes
C. Preservative penetration and retention levels
B. Dip applications
D. None of the above

Topic 6 - Fungus and Wood Fungi Section -10 Questions

Asexual Reproduction

1. The "_____" (fungi lacking the perfect or sexual stage) or Deuteromycota comprise all the species which lack an observable sexual cycle.

A. Some fungi
C. All fungi
B. Fungi imperfecti
D. None of the above

Preventing Rot

2. The key to preventing rot is to control the wood's exposure to moisture and to employ an effective prevention and treatment program. Most wood decay fungi grow only on wood with a high moisture content, usually _____ percent or above. Green (unseasoned) lumber is a prime target for decay fungi.

A. 50
C. 20
B. 40
D. None of the above

Decay Fungi
3. Decay fungi can cause severe structural damage to any wood member, even wood species such as redwood and cedar. All that is needed is a source of water in contact with the wood.
A. TRUE B. FALSE

Molds and Stains
4. Molds and stain fungi are sometimes mistaken for decay, and while they may discolor wood, they cause no structural wood damage.
A. TRUE B. FALSE

Brown Discoloration and a Crumbly Appearance
5. In one type of rot, the decayed area has a brown discoloration and a crumbly appearance. It usually breaks up into variously-sized cubes, giving rise to the name "_____ ."
A. Mildew rot C. Red rot
B. Brown cubical rot D. None of the above

Stain Fungi
6. Surface molds, "_____," and stain fungi are often found growing on the surface of damp wood and can be confused with decay fungi.
A. Mildew(s) C. Mold(s)
B. Fungal spore(s) D. None of the above

Disease Cycle of Decays
7. First, decay occurs for many years, between the stages of _____and fruiting, and _____ may continue for many years.
A. Plasmogamy - Mildew(s) C. Spores - Mold(s)
B. Plasmogamy - Fruiting D. None of the above

Molds
8. Many people confuse the presence of _____ with decay fungi. Although molds are a form of fungi, they typically grow on the surface of wood and generally do not weaken the wood's strength.
A. Micro fungi C. Molds
B. Wood rot D. None of the above

Fungi Kingdom
9. Distinguishing features of _____are the need to extract their food from the organic materials they grow on and the ability to reproduce by way of minute spores.
A. Mildew(s) C. Mold(s)
B. Fungi D. None of the above

10. Mold is the common name for many types of micro fungi. In order to grow, molds require food, suitable temperature (ideally between _____ degrees Fahrenheit), oxygen and moisture.
A. 70 and 85 C. 80 and 100
B. 85 - 95 D. None of the above

When Finished with Your Assignment

REQUIRED DOCUMENTS
Please scan the **Registration Page, Answer Key, Proctoring report, Survey and Driver's License** and email it to info@TLCH2O.com.

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

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