

**Registration form**

**LUST CEU Training Course \$200.00  
48 HOUR RUSH ORDER PROCESSING FEE ADDITIONAL \$50.00**

Start and Finish Dates: \_\_\_\_\_ *You will have 90 days from this date in order to complete this course*

List number of hours worked on assignment must match State Requirement. \_\_\_\_\_

Name \_\_\_\_\_ Signature \_\_\_\_\_  
*I have read and understood the disclaimer notice on page 2. Digitally sign XXX*

Address: \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Email \_\_\_\_\_ Fax ( \_\_\_\_\_ ) \_\_\_\_\_

Phone:  
Home ( \_\_\_\_\_ ) \_\_\_\_\_ Work ( \_\_\_\_\_ ) \_\_\_\_\_

Operator ID# \_\_\_\_\_ Exp Date \_\_\_\_\_

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

Water Treatment \_\_\_ Water Distribution \_\_\_ Onsite \_\_\_

Wastewater Treatment \_\_\_ UST Owner \_\_\_ Other \_\_\_\_\_

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

**Technical Learning College PO Box 3060, Chino Valley, AZ 86323**  
Primary Fax (928) 272-0747 [info@tlch2o.com](mailto:info@tlch2o.com)  
Telephone (928) 468-0665 Toll Free Phone (866) 557-1746

**If you've paid on the Internet, please write your Customer# \_\_\_\_\_**

**Please invoice me, my PO# \_\_\_\_\_**

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

***We will stop mailing the certificate of completion we need your e-mail address. We will e-mail the certificate to you, if no e-mail address; we will mail it to you.***

## **DISCLAIMER NOTICE**

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

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

**Professional Engineers**; Most states will accept our courses for credit but we do not officially list the States or Agencies. Please check your State for approval.

## **State Approval Listing URL...**

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

*You can obtain a printed version of the course from TLC for an additional \$169.95 plus shipping charges.*

## **AFFIDAVIT OF EXAM COMPLETION**

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

## **Grading Information**

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

**Texas Students Only**  
**Acknowledgement of Notice of Potential Ineligibility for License**  
*You are required to sign and return to TLC or your credit will not be reported.*

Name: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

Email Address: \_\_\_\_\_

By signing this form, I acknowledge that Technical Learning College notified me of the following:

- the potential ineligibility of an individual who has been convicted of an offense to be issued an occupational license by the Texas Commission on Environmental Quality (TCEQ) upon completion of the educational program;
- the current TCEQ Criminal Conviction Guidelines for Occupational Licensing, which describes the process by which the TCEQ's Executive Director determines whether a criminal conviction:
  - renders a prospective applicant an unsuitable candidate for an occupational license;
  - warrants the denial of a renewal application for an existing license; or
  - warrants revocation or suspension of a license previously granted.
- the right to request a criminal history evaluation from the TCEQ under Texas Occupations Code Section 53.102; and
- that the TCEQ may consider an individual to have been convicted of an offense for the purpose of denying, suspending or revoking a license under circumstances described in Title 30 Texas Administrative Code Section 30.33.

Enrollee Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name of Training Provider/Organization: Technical Learning College

Contact Person: Melissa Durbin      Role/Title: Dean



## 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



# LUST CEU Course Answer Key

Name \_\_\_\_\_

Telephone # \_\_\_\_\_

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

**Method of Course acceptance confirmation. Please fill this section**

Website \_\_\_ Telephone Call \_\_\_ Email \_\_\_ Spoke to \_\_\_\_\_

Did you receive the approval number, if applicable? \_\_\_\_\_

What is the course approval number, if applicable? \_\_\_\_\_

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

**Please write down any questions that cannot be found or has problems**

**Please circle, underline, bold or X only one correct answer**

**A felt tipped pen works best.**

- |             |             |             |             |
|-------------|-------------|-------------|-------------|
| 1. A B C D  | 17. A B C D | 33. A B C D | 49. A B C D |
| 2. A B C D  | 18. A B C D | 34. A B     | 50. A B     |
| 3. A B C D  | 19. A B     | 35. A B     | 51. A B C D |
| 4. A B C D  | 20. A B C D | 36. A B     | 52. A B C D |
| 5. A B C D  | 21. A B     | 37. A B C D | 53. A B C D |
| 6. A B C D  | 22. A B C D | 38. A B C D | 54. A B     |
| 7. A B C D  | 23. A B     | 39. A B     | 55. A B     |
| 8. A B C D  | 24. A B C D | 40. A B C D | 56. A B C D |
| 9. A B C D  | 25. A B     | 41. A B     | 57. A B C D |
| 10. A B C D | 26. A B C D | 42. A B C D | 58. A B C D |
| 11. A B C D | 27. A B C D | 43. A B C D | 59. A B C D |
| 12. A B C D | 28. A B C D | 44. A B C D | 60. A B C D |
| 13. A B C D | 29. A B     | 45. A B     | 61. A B     |
| 14. A B C D | 30. A B C D | 46. A B C D | 62. A B     |
| 15. A B C D | 31. A B C D | 47. A B C D | 63. A B     |
| 16. A B C D | 32. A B     | 48. A B C D | 64. A B C D |

- |             |              |              |              |
|-------------|--------------|--------------|--------------|
| 65. A B C D | 87. A B C D  | 109. A B C D | 131. A B C D |
| 66. A B     | 88. A B C D  | 110. A B C D | 132. A B C D |
| 67. A B C D | 89. A B C D  | 111. A B C D | 133. A B C D |
| 68. A B C D | 90. A B C D  | 112. A B C D | 134. A B C D |
| 69. A B C D | 91. A B C D  | 113. A B C D | 135. A B C D |
| 70. A B C D | 92. A B C D  | 114. A B C D | 136. A B C D |
| 71. A B C D | 93. A B C D  | 115. A B C D | 137. A B C D |
| 72. A B C D | 94. A B C D  | 116. A B C D | 138. A B C D |
| 73. A B C D | 95. A B C D  | 117. A B C D | 139. A B C D |
| 74. A B C D | 96. A B      | 118. A B C D | 140. A B C D |
| 75. A B C D | 97. A B      | 119. A B C D | 141. A B C D |
| 76. A B C D | 98. A B      | 120. A B C D | 142. A B     |
| 77. A B C D | 99. A B      | 121. A B C D | 143. A B C D |
| 78. A B C D | 100. A B     | 122. A B C D | 144. A B C D |
| 79. A B C D | 101. A B     | 123. A B C D | 145. A B C D |
| 80. A B C D | 102. A B C D | 124. A B     | 146. A B C D |
| 81. A B C D | 103. A B C D | 125. A B C D | 147. A B C D |
| 82. A B C D | 104. A B C D | 126. A B C D | 148. A B C D |
| 83. A B C D | 105. A B C D | 127. A B C D | 149. A B C D |
| 84. A B C D | 106. A B C D | 128. A B C D | 150. A B C D |
| 85. A B C D | 107. A B C D | 129. A B C D |              |
| 86. A B C D | 108. A B C D | 130. A B C D |              |

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

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

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**Signature**

**Please e-mail or fax this survey along with your final exam**

**LUST CEU TRAINING COURSE  
CUSTOMER SERVICE RESPONSE CARD**

NAME: \_\_\_\_\_

E-MAIL \_\_\_\_\_ PHONE \_\_\_\_\_

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

Please rate the difficulty of your course.

Very Easy    0    1    2    3    4    5    Very Difficult

Please rate the difficulty of the testing process.

Very Easy    0    1    2    3    4    5    Very Difficult

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

Very Similar    0    1    2    3    4    5    Very Different

How did you hear about this Course? \_\_\_\_\_

What would you do to improve the Course?

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How about the price of the course? Poor \_\_ Fair\_\_ Average\_\_ Good \_\_ Great \_\_

How was your customer service? Poor \_\_ Fair\_\_ Average\_\_ Good \_\_ Great \_\_

Any other concerns or comments.

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## **When Finished with Your Assignment...**

### **REQUIRED DOCUMENTS**

Please scan the **Registration Page, Answer Key, Survey and Driver's License** and email these documents to [info@TLCH2O.com](mailto: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](mailto:info@TLCH2O.com).

### **FAX**

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

### **Rush Grading Service**

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

## LUST CEU Course Assignment

***The LUST CEU Assignment is available in Word on the Internet for your convenience, please visit [www.ABCTLC.com](http://www.ABCTLC.com) and download the assignment and e mail it back to TLC.***

You will have 90 days from the start of this course to complete in order to receive your Professional Development Hours (**PDHs**) or Continuing Education Unit (**CEU**). A score of 70 % is necessary to pass this course. If you should need any assistance, please email all concerns and the completed manual to [info@tlch2o.com](mailto:info@tlch2o.com).

**We would prefer that you utilize the enclosed answer sheet in the front, but if you are unable to do so, type out your own answer key. Please include your name and address on your manual and make copy for yourself.**

**Multiple Choice, please select only one answer per question. There are no intentional trick questions. (s) Means the answer can be plural or singular tense.**

### **What Is An Underground Storage Tank (UST) System?**

1. An underground storage tank system is a tank or a combination of tanks and connected piping having at least \_\_\_\_\_ of their combined volume underground.

- A. 10 percent
- B. 30 percent
- C. 40 percent
- D. None of the above

2. Which of the following UST regulations relate only to underground tanks and piping storing either petroleum or certain hazardous substances?

- A. Federal
- B. Local government(s)
- C. State's program
- D. None of the above

3. Which of the following also may include tank types in their UST regulations—be sure you check with these authorities if you have questions about the requirements for your tank type?

- A. Federal
- B. Superfund
- C. Some state/local regulatory authorities
- D. None of the above

4. Some tank types only need to meet \_\_\_\_\_ UST requirements for cleaning up a release (these tank types have been deferred from needing to meet most other federal UST requirements).

- A. Federal
- B. Local government(s)
- C. State's program
- D. None of the above

5. Which of the following required owners of large underground tanks (greater than 42,000 gallons) to take certain measures to prevent corrosion and to test tanks periodically?

- A. Clean Water Act (CWA) of 1972
- B. Federal Insecticide, Fungicide, and Rodenticide Act
- C. Resource Conservation and Recovery Act
- D. None of the above

**Please write down any questions you were not able to find the answers or that have errors.**

## CHAPTER I. Introduction

### Where Is Groundwater Stored?

6. Actually groundwater occurs as part of what can be called the oldest recycling program - the \_\_\_\_\_.
- A. Hydrologic cycle                      C. Water cycle  
B. Unsaturated zone                      D. None of the above
7. The rest of the water soaks through the ground's surface and moves downward through the \_\_\_\_\_, where the open spaces in rocks and soil are filled with a mixture of air and water, until it reaches the water table.
- A. Hydrologic cycle                      C. Saturated zone  
B. Unsaturated zone                      D. None of the above
8. The water table is the top of the \_\_\_\_\_, or the area in which all interconnected spaces in rocks and soil are filled with water.
- A. Hydrologic cycle                      C. Saturated zone  
B. Unsaturated zone                      D. None of the above
9. Areas where groundwater exists in sufficient quantities to supply wells or springs are called aquifers, a term that literally means "\_\_\_\_\_."
- A. Geologic conditions                      C. Water bearer  
B. Unsaturated zone                      D. None of the above
10. Which of the following stores water in the spaces between particles of sand, gravel, soil, and rock as well as cracks, pores, and channels in relatively solid rocks?
- A. Hydrologic zone                      C. Aquifer(s)  
B. Unsaturated zone                      D. None of the above
11. Which of the following is controlled largely by its porosity, or the relative amount of open space present to hold water?
- A. Karst aquifers                      C. Aquifer's storage capacity  
B. Permeability                      D. None of the above
12. An aquifer's ability to transmit water, or \_\_\_\_\_, is based in part on the size of these spaces and the extent to which they are connected.
- A. Karst                      C. Aquifer's storage capacity  
B. Permeability                      D. None of the above
13. There are two kinds of aquifers: \_\_\_\_\_ and unconfined.
- A. Karst                      C. Confined  
B. Permeable                      D. None of the above
14. If the aquifer is sandwiched between layers of relatively impermeable materials, it is called a \_\_\_\_\_.
- A. Confined aquifer                      C. Unconfined aquifers  
B. Permeability                      D. None of the above

**(s) Means the answer can be plural or singular tense.**

15. Confined aquifers are frequently found at greater depths than \_\_\_\_\_.
- A. Confined aquifer    C. Unconfined aquifers  
B. Permeability        D. None of the above
16. Groundwater can move sideways as well as up or down. This movement is in response to \_\_\_\_\_, differences in elevation, and differences in pressure.
- A. Karst aquifer(s)        C. Gravity  
B. Permeable zones        D. None of the above
17. The movement is usually quite slow, frequently as little as a few feet per year, although it can move as much as several feet per day in more \_\_\_\_\_.
- A. Karst aquifer(s)        C. Unconfined aquifers  
B. Permeable zone(s)     D. None of the above
18. Groundwater can move even more rapidly in \_\_\_\_\_, which are areas in water soluble limestone and similar rocks where fractures or cracks have been widened by the action of the groundwater to form sinkholes, tunnels, or even caves.
- A. Karst aquifer(s)        C. Unconfined aquifers  
B. Permeable zone(s)     D. None of the above
19. According to the U.S. Geological Survey, groundwater use increased from about 35 billion gallons a day in 1950 to about 87 billion gallons a day in 1980.
- A. True        B. False
20. Approximately one-half of all fresh water used in the nation comes from \_\_\_\_\_.
- A. Re-use        C. Groundwater  
B. Sea water     D. None of the above
21. Whether fresh water arrives via a Public water supply system or directly from a private well, groundwater ultimately provides approximately 35 percent of the drinking water supply for urban areas and 95 percent of the supply for rural areas, quenching the thirst and meeting other household needs of more than 117 million people in this nation.
- A. True        B. False

## **CHAPTER II. Groundwater Quality**

Until the 1970s, groundwater was believed to be naturally protected from contamination.

22. Which of the following along with larger rocks were thought to act as filters, trapping contaminants before they could reach the groundwater?
- A. Water table                      C. Layers of soil and particles of sand, gravel, crushed rocks  
B. Alluvial area                      D. None of the above
23. Every state in the nation has reported cases of contaminated groundwater.
- A. True        B. False
24. Which of the following can pass through all of these filtering layers into the saturated zone to contaminate groundwater?
- A. Water table                      C. Contaminant(s)  
B. Groundwater                      D. None of the above

25. Between 1971 and 1985, 245 groundwater related disease outbreaks, with 52,181 associated illnesses, were reported.  
A. True      B. False
26. About 10 percent of all groundwater public water supply systems are in violation of drinking water standards for \_\_\_\_\_.  
A. Chemical contamination      C. Biological contamination  
B. Radiological contamination      D. None of the above
27. Although various estimates have been made about the extent of \_\_\_\_\_ contamination, these estimates are difficult to verify given the nature of the resource and the difficulty of monitoring its quality.  
A. Chemical contamination      C. Biological contamination  
B. Groundwater      D. None of the above
28. Which of the following contamination can originate on the surface of the ground, in the ground above the water table, or in the ground below the water table?  
A. Chemical contamination      C. Biological contamination  
B. Groundwater      D. None of the above
29. Where a contaminant originates is not a factor, and cannot affect its actual impact on groundwater quality.  
A. True      B. False
30. If a contaminant is spilled on the surface of the ground or \_\_\_\_\_ into the ground above the water table, it may have to move through numerous layers of soil and other underlying materials before it reaches the groundwater.  
A. Hydrologic cycle      C. Water table  
B. Unsaturated zone      D. None of the above
31. As the contaminant moves through these layers, a number of processes are in operation that can lessen the \_\_\_\_\_ once it finally reaches the groundwater.  
A. Concentrated plume      C. Eventual impact of the substance  
B. Contaminant      D. None of the above
32. The effectiveness of these processes also is affected by both the distance between the groundwater and where the contaminant is introduced and the amount of time it takes the substance to reach the groundwater.  
A. True      B. False
33. If the contaminant is introduced directly into the area below the \_\_\_\_\_, the primary process that can affect the impact of the contaminant is dilution by the surrounding groundwater.  
A. Hydrologic cycle      C. Water table  
B. Unsaturated zone      D. None of the above

**(s) Means the answer can be plural or singular tense.**

34. Like rivers or streams, groundwater tends to move quickly with some turbulence.  
A. True      B. False
35. Once the contaminant reaches the groundwater, much dilution or dispersion normally occurs.  
A. True      B. False
36. The contaminant forms a dispersed plume that can flow along the same path as the rivers or streams.  
A. True      B. False
37. Among the factors that determine the size, form, and rate of movement of the \_\_\_\_\_ plume are the amount and type of contaminant and the speed of groundwater movement.  
A. Concentrated plume      C. Groundwater  
B. Contaminant      D. None of the above
38. Because groundwater is hidden from view, \_\_\_\_\_ can go undetected for years until the supply is tapped for use.  
A. Concentrated plume      C. Groundwater  
B. Contamination      D. None of the above
39. Substances that can contaminate groundwater can be divided into two basic categories: substances that occur naturally and substances produced or introduced by man's activities.  
A. True      B. False
40. \_\_\_\_\_ that occur naturally include minerals such as iron, calcium, and selenium.  
A. Concentrated plume      C. Groundwater  
B. Substances      D. None of the above
41. Substances resulting from man's activities include synthetic organic chemicals and hydrocarbons e.g., solvents, pesticides, petroleum products; landfill leachates (liquids that have dripped through the landfill and carry dissolved substances from the waste materials), containing such substances as heavy metals and organic decomposition products; salt; bacteria; and viruses.  
A. True      B. False
42. A significant number of today's \_\_\_\_\_ problems stem from man's activities and can be introduced into groundwater from a variety of sources.  
A. Insignificant contribution      C. Groundwater contamination  
B. Pollution      D. None of the above
43. A major cause of \_\_\_\_\_ in many areas of the United States is effluent, or outflow, from septic tanks, cesspools, and privies.  
A. Insignificant contribution      C. Groundwater contamination  
B. Contamination      D. None of the above
44. Approximately \_\_\_\_\_ of all homes in the United States rely on Septic system(s) to dispose of their human wastes.  
A.  $\frac{1}{4}$       C.  $\frac{1}{5}$   
B.  $\frac{1}{2}$       D. None of the above

45. If these septic systems are improperly sited, designed, constructed, or maintained, they can allow contamination of the groundwater by bacteria, nitrates, viruses, synthetic detergents, household chemicals, and chlorides.  
A. True      B. False
46. Each system can make a(n) \_\_\_\_\_ to groundwater contamination, the sheer number of such systems and their widespread use in every area that does not have a public sewage treatment system makes them serious contamination sources.  
A. Insignificant contribution    C. Significant contribution  
B. Contamination                  D. None of the above
47. Another potentially significant source of groundwater contamination is the more than \_\_\_\_\_ surface impoundments used by municipalities, industries, and businesses to store, treat, and dispose of a variety of liquid wastes and wastewater.  
A. 180,000                          C. 380,000  
B. 280,000                          D. None of the above
48. Which of the following are supposed to be sealed with compacted clay soils or plastic liners, leaks can and do develop?  
A. Impoundments                          C. Disposal of livestock wastes  
B. Groundwater collection systems    D. None of the above
49. Agricultural activities also can make significant contributions to groundwater contamination with the millions of tons of fertilizers and pesticides spread on the ground and from the storage and \_\_\_\_\_.  
A. Impoundments                          C. Disposal of livestock wastes  
B. Leachate collection systems        D. None of the above
50. Homeowners, too, can contribute to this type of groundwater pollution with the chemicals they apply to their lawns, rosebushes, tomato plants, and other garden plants.  
A. True      B. False
51. Two part question. There are approximately \_\_\_\_\_ hazardous waste land disposal facilities and more than \_\_\_\_\_ municipal and other landfills nationwide.  
A. 500 - 16,000                          C. 16,000 - 500  
B. 1,000- 16,000                          D. None of the above
52. To protect groundwater, these facilities are now required to be constructed with clay or synthetic liners and \_\_\_\_\_.  
A. Leachate collection systems        C. Operated, and abandoned in the past  
B. Groundwater contamination        D. None of the above
53. Unfortunately, these requirements are comparatively recent, and thousands of landfills were built, \_\_\_\_\_ without such safeguards.  
A. Leachate collection systems        C. Operated, and abandoned in the past  
B. Groundwater contamination        D. None of the above

54. A number of these sites have caused serious groundwater contamination problems and are now being cleaned up by their owners, operators, or users; state governments; or the federal government under the Superfund program  
A. True      B. False
55. A lack of information about the location of many of these sites makes it difficult, if not impossible, to determine how many others may now be contaminating groundwater.  
A. True      B. False
56. Between \_\_\_\_\_ million underground storage tanks are used to store a variety of materials, including gasoline, fuel oil, and numerous chemicals.  
A. 1-2      C. 7-8  
B. 5-6      D. None of the above
57. The average life span of these tanks is \_\_\_\_\_ years, and over time, exposure to the elements causes them to corrode.  
A. 18      C. 50  
B. 25      D. None of the above
58. Replacement costs for these tanks are estimated at \$\_\_\_\_\_ per gallon of storage capacity; a cleanup operation can cost considerably more.  
A. 3      C. 5  
B. 2      D. None of the above
59. Which of the following can be another source of groundwater contamination?  
A. Water table      C. Contaminant(s)  
B. Wells      D. None of the above
60. If a well is abandoned without being properly sealed, however, it can act as a direct channel for contaminants to reach\_\_\_\_\_  
A. Hydrologic zone      C. Groundwater  
B. Unsaturated zone      D. None of the above
61. Accidents can result in in groundwater contamination.  
A. True      B. False
62. Every day accidental chemical or petroleum product spills occur that, if not handled properly, can result in groundwater contamination.  
A. True      B. False
63. Frequently, the automatic reaction of the first people at the scene of an accident involving a spill will be use a chemical absorbent to clean-up the chemical.  
A. True      B. False
64. There are numerous instances of groundwater contamination caused by the \_\_\_\_\_ dumping of hazardous or other potentially harmful wastes.  
A. Illegal      C. Allowed  
B. Legal      D. None of the above

**(s) Means the answer can be plural or singular tense.**

65. More than \_\_\_\_\_ million tons of salt are applied to roads in the United States annually.

- A. 11
- B. 100
- C. 3
- D. None of the above

66. Cleaning up contamination a complicated, costly, and sometimes impossible process.

- A. True
- B. False

67. Because of the \_\_\_\_\_ involved in the various containment and treatment methods, many communities will choose to abandon the use of the aquifer when facing contamination of their groundwater supplies.

- A. Low impact
- B. High impact
- C. High costs and technical difficulties
- D. None of the above

68. This requires the community to either find other water supplies, drill new wells farther away from the contaminated area of the aquifer, deepen existing wells, \_\_\_\_\_

- A. Itself is hidden from view.
- B. And sometimes impossible process.
- C. Or drill new wells in another aquifer if one is located nearby.
- D. None of the above

### **CHAPTER III. Government Groundwater Protection Activities**

The U.S. Environmental Protection Agency (EPA) is responsible for federal activities relating to the quality of groundwater. EPA's groundwater protection activities are authorized by a number of laws, including the following.

69. Which of the following authorizes EPA to set standards for maximum levels of contaminants in drinking water, regulate the underground disposal of wastes in deep wells, designate areas that rely on a single aquifer for their water supply, and establish a nationwide program to encourage the states to develop programs to protect public water supply wells?

- A. Safe Drinking Water Act
- B. Federal Insecticide, Fungicide, and Rodenticide Act
- C. Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
- D. None of the above

70. Which of the following regulates the storage, transportation, treatment, and disposal of solid and hazardous wastes to prevent contaminants from leaching into groundwater from municipal landfills, underground storage tanks, surface impoundments, and hazardous waste disposal facilities?

- A. Safe Drinking Water Act
- B. Federal Insecticide, Fungicide, and Rodenticide Act
- C. Resource Conservation and Recovery Act
- D. None of the above

**(s) Means the answer can be plural or singular tense.**

71. Which of the following authorizes the government to clean up contamination caused by chemical spills or hazardous waste sites that could (or already do) pose threats to the environment, and whose 1986 amendments include provisions authorizing citizens to sue violators of the law and establishing "community right-to-know" programs (Title III)?
- Safe Drinking Water Act
  - Federal Insecticide, Fungicide, and Rodenticide Act
  - Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
  - None of the above
72. Which of the following authorizes EPA to control the availability of pesticides that have the ability to leach into groundwater?
- Safe Drinking Water Act
  - Federal Insecticide, Fungicide, and Rodenticide Act
  - Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
  - None of the above
73. Which of the following authorizes EPA to control the manufacture, use, storage, distribution, or disposal of toxic chemicals that have the potential to leach into groundwater?
- Safe Drinking Water Act
  - Federal Insecticide, Fungicide, and Rodenticide Act
  - Toxic Substances Control Act
  - None of the above
74. Which of the following authorizes EPA to make grants to the states for the development of groundwater protection strategies and authorizes a number of programs to prevent water pollution from a variety of potential sources?
- Safe Drinking Water Act
  - Federal Insecticide, Fungicide, and Rodenticide Act
  - Clean Water Act
  - None of the above
75. Which of the following tend to focus on controlling potential sources of groundwater contamination on a national basis?
- Federal law(s)
  - Statewide strategies
  - Groundwater classification
  - None of the above
76. Which of the following have provided for general groundwater protection activities such as wellhead protection programs or development of state groundwater protection strategies, the actual implementation of these programs must be by the states in cooperation with local governments?
- Federal law(s)
  - Local government(s)
  - Groundwater classification
  - None of the above
77. A major reason for this emphasis on \_\_\_\_\_ is that protection of groundwater generally involves making very specific decisions about how land is used.
- Federal law(s)
  - Local action
  - Groundwater classification
  - None of the above
78. Which of the following frequently exercise a variety of land-use controls under state laws?
- Federal law(s)
  - Local government(s)
  - Groundwater classification
  - None of the above

79. \_\_\_\_\_ Requiring the development of a comprehensive plan to protect the state's groundwater resources from contamination.
- A. Groundwater classification            C. Local government(s)  
 B. Statewide strategies                    D. None of the above
80. \_\_\_\_\_ Identifying and categorizing groundwater sources by how they are used to determine how much protection is needed to continue that type of use.
- A. Standard setting                        C. Land-use management  
 B. Groundwater classification            D. None of the above
81. \_\_\_\_\_ Identifying levels at which an aquifer is considered to be contaminated.
- A. Standard setting                        C. Land-use management  
 B. Statewide strategies                    D. None of the above
82. \_\_\_\_\_ Developing planning and regulatory mechanisms to control activities on the land that could contaminate an aquifer.
- A. Standard setting                        C. Land-use management  
 B. Groundwater classification            D. None of the above
83. \_\_\_\_\_ Establishing specific financial accounts for use in the protection of groundwater quality and the provision of compensation for damages to underground drinking water supplies (e.g., reimbursement for groundwater cleanup, provision of alternative drinking water supplies).
- A. Standard setting                        C. Land-use management  
 B. Groundwater funds                    D. None of the above
84. \_\_\_\_\_ Regulating the use, sale, labeling, and disposal of pesticides, herbicides, and fertilizers.
- A. WHPA                                        C. Water-use management  
 B. Agricultural chemical(s)            D. None of the above
85. \_\_\_\_\_ Establishing criteria for the registration, construction, installation, monitoring, repair, closure, and financial responsibility associated with tanks used to store hazardous wastes or materials.
- A. WHPA                                        C. Water-use management  
 B. Underground storage tank(s)        D. None of the above
86. \_\_\_\_\_ Including groundwater quality protection in the criteria used to justify more stringent water allocation measures where excessive groundwater withdrawal could cause groundwater contamination.
- A. WHPA                                        C. Water-use management  
 B. Underground storage tank(s)        D. None of the above
87. Wellhead protection is simply protection of all or part of the area surrounding a well from which the well's groundwater is drawn. This is called a (\_\_\_\_\_).
- A. WHPA                                        C. Water-use management  
 B. Agricultural chemical(s)            D. None of the above

88. The size of the \_\_\_\_\_ will vary from site to site depending on a number of factors, including the goals of the state's program and the geologic features of the area.
- A. WHPA
  - B. Underground storage tank(s)
  - C. Water-use management
  - D. None of the above

The law specifies certain minimum components for the wellhead protection programs:

89. The roles and duties of state and local governments and public water suppliers in the management of wellhead protection programs \_\_\_\_\_.
- A. Must be established
  - B. Must be delineated
  - C. Shall be done
  - D. None of the above
90. The WHPA for each wellhead \_\_\_\_\_ (i.e., outlined or defined).
- A. Must be established
  - B. Must be delineated
  - C. Shall be done
  - D. None of the above

## **Tank Testing**

### **Inventory Control and Tank-Tightness Testing**

91. Inventory control and tank-tightness testing can only be used for \_\_\_\_\_ years after a new installation or upgrade of an existing UST.
- A. 3
  - B. 20
  - C. 10
  - D. None of the above

### **Line Tightness Testing**

92. Line-tightness testing is required annually in conjunction with automatic line leak detectors on pressure lines. U.S. suction lines (line slopes to tank with a foot valve in the tank) require a line-tightness test every \_\_\_\_\_ years.
- A. 3
  - B. 5
  - C. 7
  - D. None of the above

### **Corrosion Protection**

93. If your UST system or any part of it is protected by either sacrificial anodes or an impressed current system, the Cathodic protection must be tested at least every \_\_\_\_\_ years to make sure it is still functioning properly. The required tests can be conducted by a qualified Cathodic protection tester.
- A. 3
  - B. 2
  - C. 5
  - D. None of the above

### **Short-Term Actions**

94. Two part question. Report the release to the regulatory authority within \_\_\_\_\_ hours. However, petroleum spills and overfills of less than \_\_\_\_\_ gallons do not have to be reported if you immediately contain and clean up these releases.
- A. 3 -100
  - B. 24- 50
  - C. 24- 25
  - D. None of the above
95. Find out how far the petroleum has moved and begin to recover the leaked petroleum (such as product floating on the water table). Report your progress and any information you have collected to the regulatory authority no later than \_\_\_\_\_ days after confirming a release.
- A. 7
  - B. 20
  - C. 10
  - D. None of the above

96. Investigate to determine if the release has damaged or might damage the environment. This investigation must determine the extent of contamination both in soils and groundwater.  
A. True      B. False
97. You must report to the regulatory authority what you have learned from an investigation of your site according to the schedule established by the regulatory authority. At the same time, you must also submit a report explaining how you plan to clean up the site. Additional site studies may be required.  
A. True      B. False
98. Make sure the release poses no immediate hazard to human health and safety by removing explosive vapors and fire hazards. Your fire department should be able to help or advise you with this task.  
A. True      B. False
99. You must also make sure you handle contaminated soil properly so that it poses no hazard (for example, from vapors or direct contact).  
A. True      B. False
100. Remove petroleum from the UST system to prevent further release into the environment.  
A. True      B. False

## Safety Section

### Confined Space Entry Program

#### Purpose

101. The Confined Space Entry Program is provided to protect authorized employees that will enter confined spaces from safety or health hazards associated with confined spaces.  
A. True      B. False

#### Scope

102. According to the text, you are required to recognize \_\_\_\_\_ associated with confined spaces.  
A. Internal configurations      C. The dangers and hazards  
B. Permit-Required Confined Spaces      D. None of the above

### Definitions

#### Confined space:

103. A confined space is large enough or so configured that an employee can \_\_\_\_\_.  
A. Have sufficient oxygen      C. Recognize serious safety or health hazards  
B. Bodily enter and perform work      D. None of the above
104. A confined space has limited or restricted means for \_\_\_\_\_.  
A. An internal configuration      C. Hazardous atmosphere  
B. Entry or exit      D. None of the above
105. A confined space is not designed for \_\_\_\_\_.  
A. An internal configuration      C. Continuous employee occupancy  
B. Hazardous atmospheres      D. None of the above

106. A permit required confined space (permit space) contains or has a potential to contain a \_\_\_\_\_.
- A. Recognized internal configuration                      C. Entry or exit  
B. Hazardous atmosphere                                      D. None of the above
107. A permit required confined space (permit space) contains a material that has \_\_\_\_\_.
- A. Authorized entrants                                      C. The potential for engulfing an entrant  
B. Hazardous atmospheres                                  D. None of the above
108. A permit required confined space (permit space) has an internal configuration such that \_\_\_\_\_ could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- A. An entrant    C. An internal configuration  
B. Hazardous atmosphere                                  D. None of the above
109. A permit required confined space (permit space) contains any other recognized serious safety or \_\_\_\_\_.
- A. Engulfing problems                                      C. Health hazard  
B. Strange atmospheres                                      D. None of the above
110. Each \_\_\_\_\_ must be marked "Confined Space - Entry Permit Required".
- A. Permit-Required Confined Space                      C. Entry or exit  
B. Hazardous atmosphere                                      D. None of the above

**Confined Space Hazards**

111. Fatalities and injuries constantly occur among construction workers who are required to enter \_\_\_\_\_.
- A. An internal configuration                                  C. Confined spaces  
B. Hazardous atmosphere                                      D. None of the above
112. Workers encounter both inherent and \_\_\_\_\_ within confined workspaces.
- A. An internal configuration                                  C. Hazardous atmosphere  
B. Induced hazards    D. None of the above

**Inherent Hazards**

113. \_\_\_\_\_ are associated with specific types of equipment and the interactions among them. These hazards can be electrical, thermal, chemical, mechanical, etc.
- A. Inherent hazards    C. Recognized serious safety or health hazards  
B. Hazardous atmospheres                                      D. None of the above
114. Inherent hazards include high voltage, radiation generated by equipment, \_\_\_\_\_, omission of protective features, high or low temperatures, high noise levels, and high-pressure vessels and lines.
- A. Defective design    C. An internal configuration  
B. Hazardous atmosphere                                      D. None of the above

115. Inherent hazards usually cannot be eliminated without degrading or shutting down the system or equipment. Therefore, emphasis must be placed on \_\_\_\_\_.
- A. Hazard control methods
  - B. Hazardous atmospheres
  - C. Continuous employee occupancy
  - D. None of the above

### Induced Hazards

116. \_\_\_\_\_ result from a multitude of incorrect decisions and actions that occur during the actual construction process.
- A. Induced hazards
  - B. Below-grade locations
  - C. Build-up of explosive gases
  - D. None of the above

117. Some examples of induced hazards are: omission of protective features, physical arrangements that may cause unintentional worker contact with electrical energy sources, oxygen-deficient atmospheres created at the bottom of pits or shafts, lack of safety factors in structural strength, and \_\_\_\_\_.
- A. Common confined spaces
  - B. Flammable atmospheres
  - C. Extreme temperatures
  - D. None of the above

### Typical Examples of Confined Workspaces

118. Confined workspaces in construction contain \_\_\_\_\_.
- A. Purging agents
  - B. Below-grade location
  - C. Both inherent and induced hazards
  - D. None of the above

### Vaults

119. Workers must enter \_\_\_\_\_ found on the construction jobsite to perform a number of functions.
- A. Common confined spaces
  - B. Hazards
  - C. A variety of vaults
  - D. None of the above
120. The restricted nature of vaults and their frequently \_\_\_\_\_ are reasons that vaults have an assortment of safety and health problems.
- A. Purged atmosphere
  - B. Below-grade location
  - C. Explosive atmosphere
  - D. None of the above

### Oxygen-Deficient Atmosphere

121. The ever-present possibility of \_\_\_\_\_ is one of the major problems confronting construction workers while working in vaults.
- A. A common confined space
  - B. Vaults
  - C. An oxygen-deficient atmosphere
  - D. None of the above

### Explosive or Toxic Gases, Vapors, or Fumes

122. \_\_\_\_\_ produce toxic fumes which are confined in the limited atmosphere of a confined space.
- A. Purging agents
  - B. Below-grade locations
  - C. Welding and soldering
  - D. None of the above

### Electrical Shock

123. \_\_\_\_\_ results because the contractor has not provided an approved grounding system or the protection afforded by ground-fault circuit interrupters or low-voltage systems.

- A. Common confined space
- B. Electrical shock
- C. An oxygen-deficient atmosphere
- D. None of the above

### Purging

124. Purging agents such as nitrogen and argon may enter a vault from adjacent areas. These agents may displace the oxygen in the vault and asphyxiate workers almost immediately.

- A. True
- B. False

### Materials Falling In and On

125. According to the text, a \_\_\_\_\_ normally considered a problem associated with confined spaces is material or equipment which may fall into the vault.

- A. Common confined space
- B. Hazard
- C. Oxygen-deficient atmosphere
- D. None of the above

126. If the \_\_\_\_\_ were removed, materials could fall into the vault, causing injury to the workers inside.

- A. Purging agents
- B. Manhole covers
- C. Explosive gases
- D. None of the above

### Condenser Pits

127. Because of their large size, condenser pits found in the construction of nuclear power plants are often overlooked as \_\_\_\_\_.

- A. Common confined spaces
- B. Hazards
- C. Potentially hazardous confined spaces
- D. None of the above

128. Condenser pits create large containment areas for the accumulation of toxic fumes and gases, or for the creation of \_\_\_\_\_ when purging with argon, Freon, and other inert gases.

- A. Purging agents
- B. Oxygen-deficient atmospheres
- C. Build-up of explosive gases
- D. None of the above

129. Workers above will create other \_\_\_\_\_ by dropping equipment, tools, and materials into the condenser pit.

- A. Hazards
- B. Collection places
- C. Problems with the pumps
- D. None of the above

### Manholes

130. Manholes are necessary to provide a means of entry into and exit from vaults, tanks, and pits, but these confined spaces may present \_\_\_\_\_ which could cause injuries and fatalities.

- A. Serious hazards
- B. Ventilation ducts
- C. Sumps
- D. None of the above

131. \_\_\_\_\_ are associated with manholes. For example, workers could fall into manholes when covers are missing.
- A. Nitrogen purges
  - B. Collection places
  - C. A variety of hazards
  - D. None of the above

### Pipe Assemblies

132. The pipe assembly is one of the \_\_\_\_\_ encountered throughout the construction site,
- A. Electrical shock risks
  - B. Ventilation ducts
  - C. Most frequently unrecognized types of confined spaces
  - D. None of the above

133. Once inside a pipe assembly, workers are faced with \_\_\_\_\_, often caused by purging with argon or another inert gas.
- A. Nitrogen purge or dry air
  - B. Collection places
  - C. Potential oxygen-deficient atmospheres
  - D. None of the above

134. The worker in a pipe may be subject to toxic atmospheres from \_\_\_\_\_ generated by the worker in the pipe, or by other workers operating outside the pipe at either end.
- A. Electrical shock
  - B. Welding fumes
  - C. Sumps
  - D. None of the above

135. Pipes have \_\_\_\_\_ which provide little room for the workers to move about and gain any degree of comfort while performing their tasks.
- A. Nitrogen purge or dry air
  - B. Collection places
  - C. Generally restricted dimensions
  - D. None of the above

136. \_\_\_\_\_ is another problem to which the worker is exposed when inside a pipe assembly.
- A. Electrical shock
  - B. Ventilation ducts
  - C. Welding fumes
  - D. None of the above

137. The worker may suffer \_\_\_\_\_ caused by heat within the pipe run.
- A. Heat prostration
  - B. Exposure to toxic gases
  - C. Problems with the pumps
  - D. None of the above

### Ventilation Ducts

138. Ventilation ducts create a \_\_\_\_\_ which moves heated and cooled air and exhaust fumes to desired locations in the plant.
- A. Collection place
  - B. Complex network
  - C. Shortcut to other areas
  - D. None of the above

139. Depending on where the ventilation ducts are located, \_\_\_\_\_.
- A. Nitrogen purge or dry air may be found
  - B. Collection places could exist
  - C. Oxygen deficiency could exist
  - D. None of the above

140. Other problems associated with work inside ventilation ducts are electrical shock hazards and \_\_\_\_\_.
- A. Heat stress
  - B. Water
  - C. Welding fumes
  - D. None of the above

### Tanks

141. Tanks are \_\_\_\_\_ that are used for a variety of purposes, including the storage of water and chemicals.

- A. Nitrogen purge locations
- B. Collection places
- C. Another type of confined workspace
- D. None of the above

142. According to the text, oxygen-deficient atmospheres, along with toxic and explosive atmospheres created by the substances stored in the tanks, present hazards to workers.

- A. True
- B. False

143. Heat in tanks may cause \_\_\_\_\_, particularly on a hot day.

- A. Heat prostration
- B. Equipment failure
- C. Problems with pumps
- D. None of the above

144. The \_\_\_\_\_ often requires workers to climb ladders to reach high places on the walls of the tank.

- A. Electrical shock potential
- B. Ventilation duct
- C. Nature of the tank's structure
- D. None of the above

### Sumps

145. Workers may encounter \_\_\_\_\_ when entering sumps.

- A. Nitrogen purge or dry air
- B. Problems with pumps
- C. An oxygen-deficient atmosphere
- D. None of the above

146. Because of the wet nature of the sump, the use of power tools inside may create \_\_\_\_\_ hazards.

- A. Electrical shock
- B. Inadequate lighting
- C. Slipping
- D. None of the above

### Containment Cavities

147. Containment cavities are characterized by little or no air movement. Ventilation is always a problem, and the possibility of oxygen deficiency exists.

- A. True
- B. False

148. Welding and other gases may easily collect in containment cavities, creating \_\_\_\_\_.

- A. Toxic atmospheres
- B. Poor ventilation
- C. Confined workspaces
- D. None of the above

### Electrical Transformers

149. Before electrical transformers are opened, they must be \_\_\_\_\_ by pumping in air.

- A. Nitrogen purged
- B. Collection places
- C. Well vented
- D. None of the above

150. Before entering a transformer, testing for \_\_\_\_\_ is mandatory.

- A. Welding fumes
- B. Ventilation
- C. Oxygen deficiency and for toxic atmospheres
- D. None of the above

## **When Finished with Your Assignment...**

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