**Grade 1 & 2 Test**

1. **Personnel entering a Permit Required Confined Space must have the following training?**
2. Traffic control
3. Rescue and data entry
4. Pipe materials
5. Entry and rescue procedures
6. **Four conditions are necessary to create an explosion. Three of these conditions are combustible gas, adequate oxygen and sufficient heat. What is the fourth?**
7. Constant supply of combustible gas
8. Enclosed area that will hold the heat
9. Proper mixing of gas and oxygen.
10. Constant ventilation
11. **What tools are used with a power rodder?**
12. Finger grips
13. Pruning shears
14. Spring blades
15. Videotape camera
16. **Tools used for sewer rodding include all but the:**
17. Lag screw
18. Porcupine
19. Root saw
20. Square bar cork screw
21. **What items would you consider when selecting a solution to clear a stoppage in a sewer?**
22. Adding a solution to the upstream manhole to clear the stoppage
23. Cause of stoppage
24. Time of day
25. Staffing requirements
26. **The interior of 300 feet of 12-inch pipe is uniformly coated with one inch of grease. How many gallons will this pipe hold when filled with water?**
27. 1,222 gallons
28. 1,360 gallons
29. 1,470 gallons
30. 1,630 gallons
31. **Flatter sewer line grades may cause added sewer maintenance expense and order nuisance. The problem is most likely caused by?**
32. A decrease in velocity allowing gasses to be released from the wastewater
33. A decrease in velocity allowing organic and inorganic solids to settle out.
34. A decrease in velocity which increases the treatment time of the inorganic solids.
35. An increase in velocity which decreases the treatment time in the lines.
36. **The lowest point on the inside of a pipeline is called the:**
37. Center line
38. Haunch
39. Channel
40. Invert
41. **How often must an excavation site and adjacent areas be inspected for hazardous conditions?**
42. Hourly
43. Daily
44. Weekly
45. Monthly
46. **Protective shoring systems options include all but:**
47. Proper stopping or benching of the sides of the excavation
48. Working in an un-sloped trench with no shoring
49. Supporting the sides of a trench with shoring
50. Using a shield in the excavation area
51. **Sewer testing methods do not include:**
52. Air
53. Water
54. Mandrill
55. Sewage
56. **A flow of 650 gpm would be how many mgd?**
57. 0.472
58. 0.936
59. 1.714
60. 1.923
61. **Emergency stoppages in pipelines may be cleared safely by use of:**
62. Balling
63. High velocity cleaners
64. Bucket machines
65. Kites
66. **If it takes 7 minutes and 30 seconds for dye to travel a distance of 860 feet through an eight inch sewer, what is the velocity in fps?**
67. 1.91 fps
68. .76 fps
69. 1.02 fps
70. 2.43 fps
71. **Based on new best practices of the common ground alliance for marking underground utilities, the inquiry identification number for an underground service alert (USA) is viable for:**
72. 21 days
73. 28 days
74. 14 days
75. 30 days
76. **You receive a dispatch at 4:30 P.M. informing you that raw sewage is spewing out of a manhole onto the ground and into a small stream adjacent to a sparsely populated neighborhood. The caller reporting the problem indicated that it had been spilling sewage since 2 P.M. and that she had noticed it while driving by on the 405 freeway stuck in stop and go traffic. She indicated that she was not able to call right away and report the spill because of the restrictions on using a cell phone when driving a motor vehicle. You immediately dispatch a hydro-vac crew to the site to assist you in taking care of the problem. Upon arrival at the manhole at 5:15 P.M, you notice right away the sewage is spilling out from around an unsecured 24-inch bolt down manhole cover. You field measure the height of the sewage from the top of the frame. Based on current engineered SSO volume estimation, a sewage spout 5 inches above a manhole rim with the culver still in place tabulates out to 166 gallons per minute. You also notice that the SSO is flowing from between the manhole and the creek. As the creek was flowing rather high that afternoon after an earlier rainstorm, none of the spill would be recoverable. Your crews had setup their equipment and were able to clear the problem causing the mainline stoppage 22 minutes after your arrival. Based on the information supplied, how many reportable unrecoverable gallons of raw sewage had reached the creek?**
77. 30,622 gallons
78. 11,122 gallons
79. 36,022 gallons
80. 32, 370 gallons
81. **After completing a temporary traffic control setup for your work zone it is a good practice to:**
82. Take a 10 minute rest period so you can eat your breakfast
83. Leave the job site to go get a cup of coffee at Starbucks
84. Immediately get to work on your project
85. Observe how effective your TTC setup is working to control traffic and make the necessary changes to it if necessary.
86. **When a citizen wants information regarding a maintenance operation you should?**
87. Always refer them to a supervisor
88. Ignore them
89. Tell them you are not authorized to give out information
90. Give them as much factual information as you can, and offer to help them further.
91. **Maintenance programs are based on?**
92. A history of emergencies
93. Seasonal requirements
94. A good filling system
95. Preventive and corrective maintenance principles
96. **The goal of preventative maintenance is to?**
97. Avoid doing maintenance
98. Satisfy the city council
99. Avoid breakdowns, severe damage, or harmful depreciation
100. Use the entire budget.
101. **Equipment and traffic conditions frequently require\_\_\_\_\_\_\_\_\_ driving skills just to get to the job site:**
102. Common
103. Easy
104. Extraordinary
105. Typical
106. **Explosive or flammable atmospheres can develop\_\_\_\_\_\_\_\_\_\_\_\_ in the collections system?**
107. After high flushing velocities
108. At any time
109. Only after gasoline truck spills
110. Whenever there are toxic gases
111. **The proper testing sequence for atmospheres in confined spaces is?**
112. Combustible gases, oxygen content and toxic gases
113. Combustible gases, toxic gases and oxygen content
114. Oxygen content, combustible gases and toxic gases
115. Toxic gases, combustible gases and oxygen content
116. **The state of California requires that all employers have a written?**
117. Safety contact
118. Monthly safety meeting
119. Injury and illness prevention plan
120. Instruction manual
121. **Employees whom in the course of their job, maybe required to wear respirators must be certified medically fit.**
122. Monthly
123. Bi-annually
124. Prior to employment
125. Annually
126. **Employers must have an active safety program. Two very important aspects of this plan should be (1) routine safety meetings, and (2)?**
127. Carry insurance
128. Disciplinary actions for safety violations
129. Post the number for local medical aid
130. Get all employees to have proper safety attitude.
131. **You are working inside a pump station with a crew performing some technical and hazardous maintenance. Suddenly an accident occurs that causes severe injuries to one operator. What do you do first?**
132. Call the supervisor
133. Stop the bleeding
134. Fill out the report
135. Send for help and check and /or restore breathing.
136. **In the wastewater industry we find confined spaces everywhere. What would make a routine confined space turn into a “permit required” confined space?**
137. Any work that may change the air quality
138. Entry due to a required adjustment
139. A cleaning operation
140. A permit is always required
141. **Cal/OSHA law requires that any vertical walled trench over \_\_\_\_\_ feet deep be shored. It also requires that the spoil be placed no closer than \_\_\_\_ feet from the edge of the trench.**
142. 4/2
143. 5/1
144. 5/2
145. 4/3
146. **It is unfortunate that in the wastewater industry most of our injuries are to what part of the body?**
147. The hands
148. The feet
149. The back
150. The head because we work underground a lot.
151. **When working around pumps or other electrical machinery we are required to follow strict lockout requirements. One of the last requirements just before beginning work is to?**
152. Sign a waiver
153. Place the lockout tag in a file
154. Try to start the equipment
155. Notify the electric company
156. **When working with confined spaces it is critical to remember that all confined spaces are to be considered “permit required” confined spaces until?**
157. The supervisor approves them as “non-permit” required
158. The work is complete
159. Pre entry checks show otherwise
160. No people are in the space
161. **Illegal or incorrect connections results from improper?**
162. Bedding for service connection
163. Communication with dischargers to service connection
164. Enforcement of service connection
165. Grade for service connection
166. **Infiltration is detected by?**
167. Dye studies
168. Lamping
169. Metering flows
170. Smoke testing
171. **The underside of a manhole lid can?**
172. Be a source of inflow
173. Contribute to odor problems
174. Fail due to corrosion
175. Harbor dangerous insects
176. **An advantage of a video recording TV system is the ability to?**
177. Check out actual settling rates of disturbed joints
178. Observe water flowing down sewer
179. Record infiltration water flow in action
180. Visually monitor removal of grease
181. **One method of televising through flooded low spots or a dip in a sewer line is to?**
182. Dig up low spots and replace them
183. Install high power lamps on camera
184. Pull cameral quickly through low spots
185. Use a high velocity cleaner to push water clear of dip
186. **The purpose of forcing air into the sewer system when smoke testing is to?**
187. Blow any smoke in the sewer out before testing starts
188. Get an air flow established
189. Ventilate the sewer to remove explosive gases
190. Warn illegal connections that the system will be smoked tested.
191. **Lamping is a technique used to?**
192. Accurately pin point location of roots
193. Determine if a sewer line is straight and clear of obstructions
194. Find cracks where infiltration is entering the pipeline
195. Test new sewers for final acceptance from the contractor.
196. **Hydraulic cleaning methods consist of cleaning a sewer with?**
197. Equipment that scrapes material out of pipes
198. Surcharging manholes to clean pipe
199. Surface flows to clean sewers
200. Water under pressure that produces high water velocities
201. **If a stoppage occurs below a sewer ball, it must be cleared as soon as possible to avoid?**
202. Flooding homes and/or streets
203. High pressure that could blow-out pipe joints
204. Permanently blocking sewers
205. Washing to much grit downstream
206. **If a 6” force main has a metered flow rate of 200,000 gpd, what is the velocity?**
207. 1.2 fps
208. 1.4 fps
209. **1.6 fps (actual answer is 1.58)**
210. 2.1 fps
211. **Wastewater is pumped through an 8” force main @ the rate of 425 GPM. What is the velocity?**
212. 1.6 fps
213. 1.7 fps
214. 2.5 fps
215. **2.7 fps (actual answer 2.712 round down)**
216. **An 8” pipe serves 1837 homes with 2.6 people per home using 100 gallons of water each day. What**

**is the** **velocity in fps?**

1. **0.81 fps**
2. 0.28 cfps
3. 1.9 fps
4. 2.1 fps
5. **There are \_\_\_\_ different areas of traffic zones when working in roadways?**
6. Two
7. Seven
8. **Four**
9. Five
10. **To find proper protective gear before application of a product, you would?**
11. Never read the product label.
12. Never ask a co-worker
13. Ask someone off the street.
14. **Look at the material safety data sheet (MSDS)**
15. **The gas most commonly associated with septic wastewater is?**
16. Carbon dioxide
17. Carbon monoxide
18. **Hydrogen sulfide**
19. Methane
20. **What tools are used with a power rodder?**
21. Finger grips
22. Pruning shears
23. **Spring blades**
24. Video camera
25. **The oxygen level alarm in a gas detection meter normally set to go off at oxygen levels below?**
26. **21.5 percent**
27. 20.5 percent
28. **19.5 percent**
29. 18.5 percent
30. **Before starting a maintenance operation in a easement located in a backyard of a residence you should?**
31. Have the police order the residents to allow you access.
32. Just skip the maintenance operation.
33. **Contact the resident and politely ask for permission to enter the backyard.**
34. Just enter the backyard and ignore the resident
35. **If a ticket is called into Dig Alert on Friday at 8am, when is the earliest you can dig?**
36. **Tuesday 8am**
37. Monday 8am
38. Sunday 8am
39. Friday 8am
40. **What are the requirements for a Class B license?**
41. Air breaks and Vehicle weight more than 26,000 lbs
42. Air breaks and Vehicle weight more than 10,000 lbs
43. **Vehicle weight more than 26,000 lbs**
44. Vehicle weight less than 29,000 lbs
45. **The minimum tread requirements on a combo truck are?**  
    a. 4/32 front and 3/32 rear  
    b. 5/32 front and 2/32 rear  
    **c. 2/32 rear and 4/32 front**  
    d. 7/32 front and 4/32 rear
46. **What do you do if you’re in a confined space and your gas detector starts to alarm with a high toxic level and then zeros out and continues to alarm?**

**As soon as alarm goes off you must evacuate the confined space. Once confined space is has been evacuated you must re-evaluate the confined space atmospheric conditions by completing atmospheric testing again. If conditions show good re-calibrate test your gas detector to ensure proper working order.**

1. **What is the one thing you don’t have to check on a pre-trip inspection?**  
     
   a. Air leak  
   b. Oil leak  
   c. Horn  
   d.  **Fuel**
2. **Which of the following would you check in your pre-trip first**?
   1. **Gear box low oil**
   2. Tire rode has oil on it.
   3. 10 degree play on steering wheel
   4. Fuel level is low
3. **What check should be performed before driving a vehicle?**
   1. Mechanical/color
   2. **Mechanical/safety**
   3. Mechanical/air
   4. Mechanical/chemical
4. Wastewater collections systems are built to?
   1. **Carry away wastewater from homes and industries**
   2. Carry potential disease material to our homes
   3. To drain swamps
   4. To put people to work
5. **Manholes are used for?**
   1. **Access to sewers**
   2. Prevent inflow
   3. To hold solids after cleaning
   4. To give operators a place to rest
6. **What is the minimum size cone that can be used in a 25 or 35 mile an hour zone**?
   1. 24”
   2. 28”
   3. 18”
   4. 12”
7. **If the soil has a compressive strength of 0.5 or less it is considered?**

1. **Type C**

2. Type 3

3. Type B

4. Type 2

62. **. If the soil strength is greater than 0.5 tsf but less than 1.5 tsf or has angular gravel you have type what soil?**  
1. A  
2. 3  
3**. B**  
4. 2

63. **If the soil is hardpan or clay, it is considered?**  
  
1. Type C  
2. Type B  
3. **Type A**  
4. Type 1