

Grade 1 & 2 Test

1. **Personnel entering a Permit Required Confined Space must have the following training?**
 - a. Traffic control
 - b. Rescue and data entry
 - c. Pipe materials
 - d. **Entry and rescue procedures**

2. **Four conditions are necessary to create an explosion. Three of these conditions are combustible gas, adequate oxygen and sufficient heat. What is the fourth?**
 - a. Constant supply of combustible gas
 - b. Enclosed area that will hold the heat
 - c. **Proper mixing of gas and oxygen.**
 - d. Constant ventilation

3. **What tools are used with a power rodder?**
 - a. Finger grips
 - b. Pruning shears
 - c. **Spring blades**
 - d. Videotape camera

4. **Tools used for sewer rodding include all but the:**
 - a. **Lag screw**
 - b. Porcupine
 - c. Root saw
 - d. Square bar cork screw

5. **What items would you consider when selecting a solution to clear a stoppage in a sewer?**
 - a. Adding a solution to the upstream manhole to clear the stoppage
 - b. **Cause of stoppage**
 - c. Time of day
 - d. Staffing requirements

6. **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?**
 - a. **1,222 gallons**
 - b. 1,360 gallons
 - c. 1,470 gallons
 - d. 1,630 gallons

7. Flatter sewer line grades may cause added sewer maintenance expense and order nuisance. The problem is most likely caused by?

- a. A decrease in velocity allowing gasses to be released from the wastewater
- b. A decrease in velocity allowing organic and inorganic solids to settle out.
- c. A decrease in velocity which increases the treatment time of the inorganic solids.
- d. An increase in velocity which decreases the treatment time in the lines.

8. The lowest point on the inside of a pipeline is called the:

- a. Center line
- b. Haunch
- c. Channel
- d. Invert

9. How often must an excavation site and adjacent areas be inspected for hazardous conditions?

- a. Hourly
- b. Daily
- c. Weekly
- d. Monthly

10. Protective shoring systems options include all but:

- a. Proper stopping or benching of the sides of the excavation
- b. Working in an un-sloped trench with no shoring
- c. Supporting the sides of a trench with shoring
- d. Using a shield in the excavation area

11. Sewer testing methods do not include:

- a. Air
- b. Water
- c. Mandrill
- d. Sewage

12. A flow of 650 gpm would be how many mgd?

- a. 0.472
- b. 0.936
- c. 1.714
- d. 1.923

13. Emergency stoppages in pipelines may be cleared safely by use of:

- a. Balling
- b. High velocity cleaners
- c. Bucket machines
- d. Kites

14. 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?
- 1.91 fps
 - .76 fps
 - 1.02 fps
 - 2.43 fps
15. 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:
- 21 days
 - 28 days
 - 14 days
 - 30 days
16. 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?
- 30,622 gallons
 - 11,122 gallons
 - 36,022 gallons
 - 32,370 gallons
17. After completing a temporary traffic control setup for your work zone it is a good practice to:
- Take a 10 minute rest period so you can eat your breakfast
 - Leave the job site to go get a cup of coffee at Starbucks
 - Immediately get to work on your project
 - Observe how effective your TTC setup is working to control traffic and make the necessary changes to it if necessary.
18. When a citizen wants information regarding a maintenance operation you should?
- Always refer them to a supervisor
 - Ignore them
 - Tell them you are not authorized to give out information
 - Give them as much factual information as you can, and offer to help them further.

19. Maintenance programs are based on?

- a. A history of emergencies
- b. Seasonal requirements
- c. A good filling system
- d. Preventive and corrective maintenance principles

20. The goal of preventative maintenance is to?

- a. Avoid doing maintenance
- b. Satisfy the city council
- c. Avoid breakdowns, severe damage, or harmful depreciation
- d. Use the entire budget.

21. Equipment and traffic conditions frequently require_____ driving skills just to get to the job site:

- a. Common
- b. Easy
- c. Extraordinary
- d. Typical

22. Explosive or flammable atmospheres can develop_____ in the collections system?

- a. After high flushing velocities
- b. At any time
- c. Only after gasoline truck spills
- d. Whenever there are toxic gases

23. The proper testing sequence for atmospheres in confined spaces is?

- a. Combustible gases, oxygen content and toxic gases
- b. Combustible gases, toxic gases and oxygen content
- c. Oxygen content, combustible gases and toxic gases
- d. Toxic gases, combustible gases and oxygen content

24. The state of California requires that all employers have a written?

- a. Safety contact
- b. Monthly safety meeting
- c. Injury and illness prevention plan
- d. Instruction manual

25. Employees whom in the course of their job, maybe required to wear respirators must be certified medically fit.

- a. Monthly
- b. Bi-annually
- c. Prior to employment
- d. Annually

- 26. Employers must have an active safety program. Two very important aspects of this plan should be (1) routine safety meetings, and (2)?**
- Carry insurance
 - Disciplinary actions for safety violations
 - Post the number for local medical aid
 - Get all employees to have proper safety attitude.**
- 27. 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?**
- Call the supervisor
 - Stop the bleeding
 - Fill out the report
 - Send for help and check and /or restore breathing.**
- 28. In the wastewater industry we find confined spaces everywhere. What would make a routine confined space turn into a "permit required" confined space?**
- Any work that may change the air quality**
 - Entry due to a required adjustment
 - A cleaning operation
 - A permit is always required
- 29. 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.**
- 4/2
 - 5/1
 - 5/2**
 - 4/3
- 30. It is unfortunate that in the wastewater industry most of our injuries are to what part of the body?**
- The hands
 - The feet
 - The back**
 - The head because we work underground a lot.
- 31. 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?**
- Sign a waiver
 - Place the lockout tag in a file
 - Try to start the equipment**
 - Notify the electric company

32. When working with confined spaces it is critical to remember that all confined spaces are to be considered “permit required” confined spaces until?

- a. The supervisor approves them as “non-permit” required
- b. The work is complete
- c. Pre entry checks show otherwise
- d. No people are in the space

33. Illegal or incorrect connections results from improper?

- a. Bedding for service connection
- b. Communication with dischargers to service connection
- c. Enforcement of service connection
- d. Grade for service connection

34. Infiltration is detected by?

- a. Dye studies
- b. Lamping
- c. Metering flows
- d. Smoke testing

35. The underside of a manhole lid can?

- a. Be a source of inflow
- b. Contribute to odor problems
- c. Fail due to corrosion
- d. Harbor dangerous insects

36. An advantage of a video recording TV system is the ability to?

- a. Check out actual settling rates of disturbed joints
- b. Observe water flowing down sewer
- c. Record infiltration water flow in action
- d. Visually monitor removal of grease

37. One method of televising through flooded low spots or a dip in a sewer line is to?

- a. Dig up low spots and replace them
- b. Install high power lamps on camera
- c. Pull cameral quickly through low spots
- d. Use a high velocity cleaner to push water clear of dip

38. The purpose of forcing air into the sewer system when smoke testing is to?

- a. Blow any smoke in the sewer out before testing starts
- b. Get an air flow established
- c. Ventilate the sewer to remove explosive gases
- d. Warn illegal connections that the system will be smoked tested.

39. Lamping is a technique used to?

- a. Accurately pin point location of roots
- b. Determine if a sewer line is straight and clear of obstructions
- c. Find cracks where infiltration is entering the pipeline
- d. Test new sewers for final acceptance from the contractor.

40. Hydraulic cleaning methods consist of cleaning a sewer with?

- a. Equipment that scrapes material out of pipes
- b. Surcharging manholes to clean pipe
- c. Surface flows to clean sewers
- d. Water under pressure that produces high water velocities

41. If a stoppage occurs below a sewer ball, it must be cleared as soon as possible to avoid?

- a. Flooding homes and/or streets
- b. High pressure that could blow-out pipe joints
- c. Permanently blocking sewers
- d. Washing too much grit downstream

42. If a 6" force main has a metered flow rate of 200,000 gpd, what is the velocity?

- a. 1.2 fps
- b. 1.4 fps
- c. 1.6 fps (actual answer is 1.58)
- d. 2.1 fps

43. Wastewater is pumped through an 8" force main @ the rate of 425 GPM. What is the velocity?

- a. 1.6 fps
- b. 1.7 fps
- c. 2.5 fps
- d. 2.7 fps (actual answer 2.712 round down)

44. 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?

- a. 0.81 fps
- b. 0.28 cfps
- c. 1.9 fps
- d. 2.1 fps

45. There are ____ different areas of traffic zones when working in roadways?

- a. Two
- b. Seven
- c. Four
- d. Five

- 46. To find proper protective gear before application of a product, you would?**
- a. Never read the product label.
 - b. Never ask a co-worker
 - c. Ask someone off the street.
 - d. Look at the material safety data sheet (MSDS)**
- 47. The gas most commonly associated with septic wastewater is?**
- a. Carbon dioxide
 - b. Carbon monoxide
 - c. Hydrogen sulfide**
 - d. Methane
- 48. What tools are used with a power rodder?**
- a. Finger grips
 - b. Pruning shears
 - c. Spring blades**
 - d. Video camera
- 49. The oxygen level alarm in a gas detection meter normally set to go off at oxygen levels below?**
- a. 21.5 percent**
 - b. 20.5 percent
 - c. 19.5 percent**
 - d. 18.5 percent
- 50. Before starting a maintenance operation in a easement located in a backyard of a residence you should?**
- a. Have the police order the residents to allow you access.
 - b. Just skip the maintenance operation.
 - c. Contact the resident and politely ask for permission to enter the backyard.**
 - d. Just enter the backyard and ignore the resident
- 51. If a ticket is called into Dig Alert on Friday at 8am, when is the earliest you can dig?**
- a. Tuesday 8am**
 - b. Monday 8am
 - c. Sunday 8am
 - d. Friday 8am
- 52. What are the requirements for a Class B license?**
- a. Air breaks and Vehicle weight more than 26,000 lbs
 - b. Air breaks and Vehicle weight more than 10,000 lbs
 - c. Vehicle weight more than 26,000 lbs**
 - d. Vehicle weight less than 29,000 lbs

53. 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

54. 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.

55. 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**

56. Which of the following would you check in your pre-trip first?

- a) Gear box low oil**
- b) Tire rode has oil on it.
- c) 10 degree play on steering wheel
- d) Fuel level is low

57. What check should be performed before driving a vehicle?

- a. Mechanical/color
- b. Mechanical/safety**
- c. Mechanical/air
- d. Mechanical/chemical

58. Wastewater collections systems are built to?

- a. Carry away wastewater from homes and industries**
- b. Carry potential disease material to our homes
- c. To drain swamps
- d. To put people to work

59. Manholes are used for?

- a. Access to sewers**
- b. Prevent inflow
- c. To hold solids after cleaning
- d. To give operators a place to rest

60. What is the minimum size cone that can be used in a 25 or 35 mile an hour zone?

- a. 24"
- b. 28"
- c. 18"
- d. 12"

61. 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