Study Guide for the
Certified RV Plumbing Specialist Test
Compiled by the Recreation Vehicle Industry Association

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Overview

The purpose of this Study Guide is to help the Recreation Vehicle (RV) Service Technician prepare to take and pass the RVIA/RVDA Certified RV Plumbing Specialist Test.

Note: The Certified RV Service Technician and Specialist is a Recreational Vehicle Industry designation. It does not constitute licensing or permission to perform any function or task controlled by state or local regulations. Technicians are required to meet all state and local requirements before performing any regulated tasks.

What is an RV Service Technician?

Recreation vehicles have come a long way since the early days of the RV Industry, especially in the technical sense. So much so, it takes training, dedication and the command of specialized skills to become a successful RV service technician.

Today’s service technician must acquire and apply intelligent troubleshooting skills covering the vast amount of technical equipment found within a wide range of recreation vehicle types. In addition, a qualified RV service technician must be proficient with a variety of hand and powered tools and have the ability to read, understand, implement and install numerous accessories and add-on components common to the RVing lifestyle. Performing proper and complete preventive maintenance procedures is yet another must-have skill the qualified service tech will master.

The reward is that, once the above is accomplished, a valued RV service technician will seldom (if ever), be without a job. To this day, there remains a remarkable shortage of qualified RV service technicians in the industry to staff not only traditional RV dealerships, but also those of stand-alone service shops and repair centers that are constantly seeking qualified individuals. There are many service technicians that open their own mobile RV repair business.

The bottom line is that all good RV service technicians will always have work, even during the toughest of economic times. It’s been proven; serious RVers will never entirely give up their lifestyle. They may take shorter, less frequent excursions, but even when fuel costs approach record highs, they will still be using that RV! And that’s the very reason it is an attractive option to become a professional RV service technician.

RVST Career Ladder

The Service Technician Career Ladder was developed and launched through the combined efforts of the RV Dealer Association (RVDA), the RV Industry Association (RVIA) and the Certification Governing Board.
Before the Career Ladder was established there was only one way to become a Certified RV Technician and that was to take and pass a comprehensive certification test. With the launch of the Career Ladder there are now two paths to certification. There is the traditional path through the existing RV Service Technician Certification Test and an alternate path through achieving Specialty Certifications.

The certification process begins with the Candidate level which provides a basic orientation to the RV Service Technician career. Next comes the Registered Technician level where the core knowledge of propane, basic electrical, and other skills are mastered. The technician can then move on to one of two paths. He can choose to take the comprehensive test which covers all subjects required for certification or master certification or he can choose to move through the individual specialties.

- Appliances
- Body
- Chassis
- Electrical Systems
- Plumbing

Once a technician holds all five Specialties, or passes the full certification test at the master level, and meets the time-in-service requirement he becomes a Master Certified RV Technician.

**What You Must Know to Pass the RV Plumbing Specialist Test**

The curriculum for the RV Plumbing Specialist begins with the DACUM Chart Job and Task Analysis. This document outlines all the Duties, Tasks and Steps a Specialist is expected to know. The DACUM is also known as the RV Service Technician Standard and is further broken down to align with the levels of the RVST Career Path.
This study guide is focused on the Plumbing Specialist level of the Career Path.

The Plumbing Specialist Chart lists all of the Duties, Tasks and Steps associated with the Plumbing Specialist level.

Each section begins with the Duties, which will list the main topics covered. The Duties are followed by the activities a specialist must be able to perform in each area. This list was developed by working technicians, educators and subject matter experts from across the country and will provide a valuable check list of what to study for the test.

It should be noted that the number of questions in each area may not equal the number of tasks listed. Some of the tasks are complex and broad in scope and may be covered by several questions. Other tasks are simple and narrow in scope and one question may cover several tasks. The main objective in listing the tasks is to describe accurately what is done on the job, not to make each task correspond to a particular test question.

The Plumbing Specialist Standards Chart begins on page 4.

Sample questions will follow. Although these same questions will not appear on actual tests, they are in the same format and cover the same topics as the actual test questions.

Resource list

The following resources are available to help you prepare for the Plumbing Specialist Test. The RVIA Textbooks and publications are available through the RVIA Store at www.rvia.org.

Plumbing Systems – RVIA Textbook

There are no sign-off sheets associated with the Plumbing Specialty.

Taking the test

Get plenty of rest the night before so you will be alert and efficient. Arrive early enough to find the building and testing room. Be sure to bring your test center admission ticket and current photo I.D. The proctor will instruct you in filling out the answer booklet if taking the written test or how to log on to the computer if you are taking the on-line test.

Once testing has begun, keep track of time. Do not spend too long on any single question. Be sure to read each question carefully so you understand exactly what is being asked. Do not mark answers in the test booklet if taking the written test; they must be marked on the answer sheet. Your test will not be scored if your answers are not on the answer sheet.

If a question is difficult, mark the answer that you think is correct and put a check by it in the test booklet. (Computer-based tests allow you to do this on screen.) Then go on to the next question. If you finish before time is up, you may go back to the question that you have checked.

It is to your advantage to answer every question. Do not leave any answers blank. Your score will be based only on the number of correct answers you give.
# RV Plumbing Specialist Standards Chart

## A. PROPANE SYSTEMS

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>Inspect/maintain/replace/add propane piping system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a Inspect low pressure system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--flare</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--pipe fitting</td>
<td></td>
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<tr>
<td></td>
<td>--compression</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--sealant per RV standards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--tubing, hose, pipe and routing and supports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--quick disconnect/manual shut off valve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--solenoid shut off valves</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Add piping system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--use flaring tools</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--use pipe cutting and threading equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--select and use proper tube, hose and pipe (types of copper tube, hose or black pipe)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--use proper fittings and sealants</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Proper use of plugs and caps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--removed appliance or opened propane line</td>
<td></td>
</tr>
</tbody>
</table>

## D. PLUMBING SYSTEMS

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>15</td>
<td>Perform fresh water system tests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a Perform pressure test</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--with air only</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--with water</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Perform water system operational evaluations for all hot and cold piping</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--city water pressure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--demand pump</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--air pressurized system (found in older models)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--manual pump</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Complete documentation</td>
<td></td>
</tr>
</tbody>
</table>

| 16 | Inspect/repair fresh water storage tanks |   |
| a | Repair/replace fresh water tanks, gravity fill and vent |   |
| b | Repair/replace city water fill, regulator, check valve(s) |   |
| c | Inspect/replace low point fresh water storage tank drain system |   |
| d | Install/inspect monitor panel probes for leakage |   |
| e | Sanitize the fresh water distribution system including fresh water storage tanks |   |
| f | Pressure water fill with attached cap; confirm adequate venting |   |
| g | Gravity water fill; confirm adequate venting; confirm appropriate sanitizing label |   |

<p>| 17 | Inspect/repair fresh water distribution systems |   |
| a | Eliminate water leaks in any section of piping, at any fitting or valve in the fresh water system. |   |
| b | Repair/replace accumulator |   |
| c | Repair/replace water purifiers and filter |   |
| d | Repair/replace faucets, diverters |   |
| e | Inspect/replace vacuum breakers |   |
| f | Inspect/eliminate crossed piping connections between hot and cold lines |   |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>g</td>
<td>Winterize fresh water distribution system</td>
</tr>
<tr>
<td>h</td>
<td>Verify separation between waste and fresh water systems</td>
</tr>
<tr>
<td>i</td>
<td>Repair/replace water manifolds</td>
</tr>
<tr>
<td>j</td>
<td>Inspect/replace flexible supply lines for slideout rooms</td>
</tr>
<tr>
<td>k</td>
<td>--verify no kinks or chafing</td>
</tr>
<tr>
<td></td>
<td>--verify correct sizing</td>
</tr>
<tr>
<td></td>
<td><strong>18 Inspect/repair/replace fixtures/devices</strong></td>
</tr>
<tr>
<td>a</td>
<td>Repair/replace toilet</td>
</tr>
<tr>
<td></td>
<td>--3 types of toilets (water seal, vacuum flush, and mechanical seal)</td>
</tr>
<tr>
<td></td>
<td>--replace toilet components such as vacuum breakers, solenoid valves, macerators, sprayers, water savers, water valves, seals, etc.</td>
</tr>
<tr>
<td></td>
<td>--verify appropriate line sizes</td>
</tr>
<tr>
<td>b</td>
<td>Repair/replace shower/tub</td>
</tr>
<tr>
<td>c</td>
<td>Repair/replace sink(s)</td>
</tr>
<tr>
<td>d</td>
<td>Install/repair/replace exterior showerhead/faucet assembly</td>
</tr>
<tr>
<td>e</td>
<td>Install/repair/replace waste holding tank flushing systems</td>
</tr>
<tr>
<td>g</td>
<td>Install/repair/replace winterizing kit (manual and electric)</td>
</tr>
<tr>
<td></td>
<td><strong>19 Perform waste water tests</strong></td>
</tr>
<tr>
<td>a</td>
<td>Perform flood test</td>
</tr>
<tr>
<td>b</td>
<td>Perform flow test</td>
</tr>
<tr>
<td></td>
<td><strong>20 Inspect/repair/replace waste holding tanks</strong></td>
</tr>
<tr>
<td>a</td>
<td>Visually inspect/repair/replace tank and mountings</td>
</tr>
<tr>
<td>b</td>
<td>Inspect/repair/replace termination valves/fittings</td>
</tr>
<tr>
<td></td>
<td>--manual</td>
</tr>
<tr>
<td></td>
<td>--electric</td>
</tr>
<tr>
<td>c</td>
<td>Install/inspect monitor panel probes for leakage</td>
</tr>
<tr>
<td></td>
<td>--clean monitor panel probes</td>
</tr>
<tr>
<td>d</td>
<td>Weld Rotocast tanks</td>
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<tr>
<td>e</td>
<td>Patch ABS tanks</td>
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<tr>
<td>f</td>
<td>Inspect vent stacks</td>
</tr>
<tr>
<td></td>
<td>--inspect for debris and other clogs</td>
</tr>
<tr>
<td></td>
<td>--inspect for proper length</td>
</tr>
<tr>
<td></td>
<td><strong>21 Inspect/repair/replace drainage piping system</strong></td>
</tr>
<tr>
<td>a</td>
<td>Inspect/replace fittings and piping</td>
</tr>
<tr>
<td>b</td>
<td>Inspect/replace vents, drains and traps</td>
</tr>
<tr>
<td>c</td>
<td>Inspect/replace pipe support system</td>
</tr>
<tr>
<td>d</td>
<td>Inspect and verify drain piping slope</td>
</tr>
<tr>
<td>e</td>
<td>Install/inspect/replace flexible drain systems</td>
</tr>
<tr>
<td>f</td>
<td>Inspect flexible drain connectors for slideout rooms</td>
</tr>
<tr>
<td></td>
<td>--verify slope</td>
</tr>
<tr>
<td></td>
<td>--verify no kinks or chafing</td>
</tr>
<tr>
<td></td>
<td>--verify correct sizing</td>
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<tr>
<td>g</td>
<td>Inspect/repair/replace waterless sanitary valves (Hepvo)</td>
</tr>
<tr>
<td>h</td>
<td>Install macerator systems</td>
</tr>
<tr>
<td>i</td>
<td>Inspect/replace anti-siphon trap vent devices</td>
</tr>
</tbody>
</table>
Sign-off Sheet Required Knowledge

There are no sign-off sheets associated with the Plumbing Specialist. The 14 sign-off sheets for all other specialties can be downloaded from the RV Learning Center’s web site, www.rvlearningcenter.com.

Practice Questions

1. When using thread sealing tape to seal a propane pipe thread connection, the tape
   A. must be applied to the male threads.
   B. must be wrapped 2 to 3 times counterclockwise.
   C. should not be used under any situation.
   D. must be blue in color.

2. A brass fitting that has been annealed has been stress-relieved by
   A. being heated, then cooled.
   B. soaking for a minimum of 5 minutes in a special chemical.
   C. a special milling process that keeps stress from occurring.
   D. applying a special dye for stress relief and identification purposes

3. The pressure relief valve setting on a propane cylinder is
   A. 312 psi
   B. 250 psi
   C. 375 psi
   D. 125 psi

4. Which of the following materials is not approved for use in a propane gas system?
   A. Forged brass fittings.
   B. Type N copper tubing.
   C. UL 569 flexible hose assemblies.
   D. Iron pipe.

5. The most likely cause of propane flow restrictions in copper tubing is,
   A. A tubing kink
   B. Improper installation
   C. Too much gas pressure
   D. Not enough line support

6. When sizing the propane system of an RV the maximum developed length of the system needs to be determined. This is always the
   A. Longest length of piping used
   B. Longest branch line of copper tubing used
   C. Length of piping to the appliance furthest from the propane container(s)
   D. Length of the iron piping only

7. The maximum allowable length of a UL 569 listed flexible hose assembly is
   A. 90 Inches
8. In a lock-out tag-out situation, the lock-out
   A. prevents an unintentional release of propane.
   B. requires the cylinder to be locked to prevent use.
   C. keeps individuals from entering the RV
   D. locks the hitch coupling of a trailer to prevent RV use

9. A propane system is constructed of a copper manifold and riser. The tubing must be secured every ____ feet.
   A. 2
   B. 4
   C. 6
   D. 8

10. When tubing connections are made within a run of iron pipe, the pipe must be secured within ____ inches of tubing connections.
    A. 10 Inches
    B. 12 Inches
    C. 14 Inches
    D. 20 Inches

11. The two product listing standards for flexible hose assemblies are
    A. UL 569 and UL 21.
    B. UL 234 and UL 701.
    C. UL 144 and UL 72.
    D. Listing as an assembly is not mandated.

12. Flexible hose assemblies are not permitted within a range’s burner box because
    A. trapped heat within the burner box could melt the hose material.
    B. it is allowed within the burner box if the assembly is listed.
    C. heat impacts the flexible hose and increases the system pressure.
    D. the flexible hose could interfere with the burner shut-off valves.

13. The minimum OD size a copper tube branch line is
    A. 1/4 inch.
    B. 3/8 inch.
    C. 1/2 inch.
    D. 5/8 inch.

14. A properly threaded pipe end will contain how many tapered threads?
    A. 8-9
    B. 10-11
    C. 11-12
    D. 13-14
15. When copper tubing is flared, it is important to first de-burr the inside and outside of the tube to prevent
   A. off-set center flare.
   B. loose scales.
   C. uneven cutting.
   D. cracked tubing.

16. Listed flexible hose connectors are typically used
   A. between any two slide rooms.
   B. between the DOT cylinders and the propane regulator.
   C. only in the water distribution system.
   D. anywhere.

17. An overly long threaded pipe end is not permitted because
   A. it is tapered.
   B. the pipe will not properly seat within its fitting.
   C. the threads are too thin and will no longer meet the proper schedule.
   D. it does not remain square after threading.

18. Propane lines must be routed in such a way as to prevent
   A. physical damage.
   B. exterior exposure.
   C. 90-degree turns.
   D. the use of copper tubing.

19. Copper tubing can be flared properly
   A. only with a hand-held tool
   B. only on a bench
   C. only with a double flare when connected to a propane appliance
   D. as a single flare of 45 degrees

20. Testing the water distribution system can be accomplished with air or water pressure. When using air, why must the water heater be isolated from the system?
   A. If ruptured, extensive damage could result.
   B. Water heaters are listed and additional testing is not required.
   C. Air in the tank can cause a false measurement.
   D. Air promotes rust and should be avoided.

21. A backflow preventer or check valve may be located at the
   A. Water pump, city water inlet, water heater
   B. Water pump, water heater, lavatory faucet
   C. Water tank, water heater, galley faucet
   D. City water inlet lavatory faucet, water heater

22. If a check valve has failed at the water heater, it may result in
   A. limited hot water at any faucet.
   B. increased pressure at the galley faucet.
   C. no cold or hot water flow.
23. The temperature and pressure relief valve on a water heater is limited to a maximum of
   A. 210 degrees F and 150 psi.
   B. 175 degrees F and 175 psi.
   C. 150 degrees F and 210 psi.
   D. 210 degrees F and 225 psi.

24. When a water distribution system is leak tested with air pressure only, which of the following statements is false?
   A. Pressurize the system to between 80 and 100 psi.
   B. Pressurize PVC piping (if so equipped) to a lower pressure as directed by the piping manufacturer.
   C. Bypass the water heater tank completely.
   D. The water pump must be isolated from the test and not pressurized.

25. From a user's standpoint, if a water heater bypass kit contained partially opened valves, what would be the likely result?
   A. Lukewarm water only, at multiple faucets.
   B. Greatly reduced overall water pressure.
   C. No hot water at any faucet.
   D. Not water at only a single faucet.

26. The maximum pressure a water distribution system should ever be exposed to is
   A. 80 psi
   B. 100 psi
   C. Limited to the minimum setting of the pressure regulator
   D. Equal to the incoming city water pressure

27. A check valve at the city water fill must be replaced if
   A. excessive calcium deposits form.
   B. it contacts hot water.
   C. it causes the water pump to malfunction.
   D. the water pressure in the storage tank increases more than 30 psi.

28. A city water fill can be used to fill a non-pressurized storage tank
   A. if the tank vent is at least as large as the fill line.
   B. when a check valve is installed at the water heater.
   C. when a check valve is installed at the city water inlet.
   D. it is not permitted. The storage tank is not listed for pressure use.

29. When replacing a polyethylene water storage tank, the new tank fitting's mounts may be
   A. installed by spin-welding
   B. non-plastic
   C. glued in place with a two-part epoxy
   D. inserted with proflex

30. When winterizing the water distribution system, which statement is false?
A. Use low point drains.
B. Fill the system with RV anti-freeze.
C. Open the fixture faucets.
D. Fill all tanks with water first to assist in anti-freeze disbursement.

31. What is the active ingredient used when sanitizing the fresh water system?
   A. Water conditioning salt.
   B. Water.
   C. Anti-freeze.
   D. Household bleach.

32. To prevent waste water to fresh water contamination, a potential reality with a shower hose, what is installed to prevent cross contamination?
   A. D-spud.
   B. Vacuum breaker.
   C. Low point drain.
   D. A location at least 1” above the fixture’s floor level.

33. A vent is installed in a fresh water storage tank to
   A. release air as the tank fills.
   B. alert the user when the tank is full.
   C. assist with winterization.
   D. ensure the water tank is completely filled.

34. A vacuum breaker is typically used?
   A. At each faucet.
   B. On shower hoses.
   C. At the sewer hose connection.
   D. At the water heater.

35. Which of the following requires a vacuum breaker?
   A. Exterior shower hose.
   B. Water heater.
   C. The outlet of the water storage tank.
   D. Water pump.

36. The minimum drain line size for the gray water holding tank is _________.
   A. 1-1/4 inches
   B. 1-1/2 inches
   C. 2 inches
   D. 3 inches

37. Vibrations in water lines may be minimized or eliminated with the addition of
   A. an accumulator tank.
   B. a larger water filter.
   C. a higher capacity water pump.
   D. a water softener.
38. Regarding water purifiers, which of the following statements is false?
   A. They should be removed when sanitizing the water distribution system.
   B. They should never be subjected to a pressure greater than 30 psi.
   C. They should be removed before performing winterizing procedures using RV anti-freeze.
   D. They should always be replaced in accordance with the manufacturer’s recommendations.

39. Concerning the fresh water distribution system, an air gap is
   A. A break in a water distribution line
   B. That space above the waterline inside the storage tank
   C. The space between a faucet outlet and the flood rim of its fixture
   D. The space between a fixture overflow drain and the flood rim of the fixture

40. A toilet slide valve will not fully close, causing water to continually enter the bowl. A common cause is
   A. Tissue wedged into the valve seat.
   B. A faulty vacuum breaker.
   C. A non-functioning foot pedal.
   D. The use of an improper holding tank additive.

41. When a new sink faucet is installed, what is typically used to seal it to the sink?
   A. Faucet caulking .
   B. Supplied gasket.
   C. Silicone sealant.
   D. Nothing.

42. Exterior showerheads are usually equipped with a vacuum breaker in order to
   A. compensate for uneven ground.
   B. utilize buckets and tubs.
   C. prohibit cross-contamination.
   D. minimize water consumption.

43. A dripping vacuum breaker is a sign that it is likely
   A. functioning correctly.
   B. defective.
   C. cross-threaded.
   D. too small.

44. When conducting a flood test, the waste system should be filled with water
   A. to the flood rim of the lowest fixture.
   B. to the flood rim to the highest fixture.
   C. until it enters the lowest fixture.
   D. until each fixture is ½ full.

45. When flood testing the body waste system, fill with water until water is
   A. visible in the shower pan
   B. at the level of the toilet flange
   C. in the kitchen sink
D. at least at the ½ full level

46. The flood test level of a waste water system should never exceed a height of 18 inches in order to avoid
   A. holding tank damage.
   B. retarded flow.
   C. false test results.
   D. over pressurizing the system.

47. When conducting the flow test, fixtures are to be filled
   A. to the flood level.
   B. 3/4 full.
   C. 1/2 full.
   D. only until water enters the bottom of the fixture.

48. A flow test is conducted to check for
   A. retarded flow.
   B. leaks.
   C. proper drain slope.
   D. correct operating pressure.

49. Two tests performed on the waste drainage system of an RV are
   A. pressure drop test and water column test.
   B. flood test and flow test.
   C. flow test and pressure drop test.
   D. pressure drop test and flood test.

50. When considering a repair to any plastic tank, besides the type of material, which of the following is not a consideration?
   A. Cost of repair.
   B. Age of tank.
   C. Location of the damage.
   D. Size of the tank.

51. All holding tanks should terminate on the
   A. right side of the RV within 22 feet of the rear.
   B. front of the RV on the left road side.
   C. left rear side of the RV or on the rear, left of the center line.
   D. right rear of the RV at least 18 inches above the road surface.

52. When over-exposed to sunlight, that portion of a plastic tank may
   A. deteriorate.
   B. not be painted.
   C. be covered with solvent.
   D. form condensation.
53. When properly connected to a campground sewer inlet, all holding tank termination valves should be
   A. kept closed until each tank is ready to be emptied.
   B. kept open since the connection is directly to the sewer inlet.
   C. disabled to avoid tampering.
   D. locked and tagged.

54. All holding tanks must
   A. be supported to withstand 8 times their filled weight.
   B. be removable.
   C. be designed to keep liquid and body waste separated.
   D. terminate into one main drain.

55. Waste system vent pipes with caps should also be sealed at the ceiling to prevent
   A. sewer gases from entering the RV.
   B. excessive moisture accumulation.
   C. unwanted airflow over the vent pipe opening.
   D. the vent pipe from slipping into the holding tank.

56. Every fixture in the RV must have a/an
   A. approved trap and vent.
   B. full length fixture tail-piece.
   C. weir.
   D. drain plug.

57. An anti-siphon trap vent device cannot be used as a primary vent because it
   A. is not a listed fitting.
   B. does not allow air out of the system.
   C. an only serve a single fixture.
   D. is installed too low relative to the fixtures.

58. The maximum number of fullway termination valves permitted on a body waste holding tank is
   A. 1.
   B. 2.
   C. 3.
   D. 4.

59. When a flush toilet is installed in an RV, the minimum size vent pipe for the toilet is
   A. 1 ¼ inches.
   B. 1 ½ inches.
   C. 2 inches.
   D. 3 inches.

60. Considering waste system repairs, which statement is not correct?
   A. Maintain the size and design of the original system.
   B. Traps and vent sizes should not be altered or changed.
   C. Maintain the same types of materials.
   D. Defer to the RV owner's request, without fail.
61. When an RV demand pump cycles periodically when there is no demand on the system (faucets are off) this usually indicates ______.
   A. no water is in the system
   B. the holding tanks are overfilled
   C. a leak is present somewhere in the supply system
   D. insufficient electrical current to the pump

62. The best method for testing a water distribution system for leaks is to ______.
   A. use an electronic leak detector
   B. perform a pressure drop test using a gauge and water or air pressure
   C. visually check for leaks
   D. use leak detector solution

63. City water connection of an RV with potable water tanks attached to the same water distribution system must have ______.
   A. a pressure regulator
   B. a 3/4 inch male swivel connection
   C. a backflow prevention device installed
   D. an accumulator tank

64. The purpose of a vacuum breaker on the inlet of an RV toilet is to ______.
   A. prevent overfilling the bowl
   B. allow air to mix with the toilet water for better flushing
   C. prevent siphonage of toilet bowl water into the RV potable water system
   D. prevent pressure buildup in the supply line

65. When performing a flood test of the gray waste water system, the system should be filled to the ______.
   A. top of the holding tanks
   B. flood level of the highest fixture
   C. flood level of the lowest fixture
   D. rim of the toilet

66. The most common method for repairing a hole in an ABS plastic holding tank is ______.
   A. plastic patching
   B. plastic welding
   C. Cannot repair, tank must be replaced.
   D. spin patching

67. The purpose of a P-trap at every fixture drain in a plumbing drainage system is to ______.
   A. prevent siphonage.
   B. trap grease and other debris
   C. provide a water seal preventing gases from escaping into the RV
   D. prevent water drainage noise

68. Which of the following is the function of a check valve?
A. Prevents the water pump from being damaged by over pressure.
B. Prevents the back passage of air.
C. Allows for the flow of liquid in only one direction.
D. Allows for the flow of air to or from a drainage system.

69. Which of the following is not a type of plastic piping used for RV water distribution systems?
   A. PVC.
   B. CPVC.
   C. PEX.
   D. PTRV.

70. When hanging piping, support the piping every feet ________ (centimeters).
   A. 2' (60.96)
   B. 4' (121.9)
   C. 6' (182.9)
   D. 8' (243.8)

71. The typical water pressure created by a demand water pump is ___ psi.
   A. 20
   B. 40
   C. 60
   D. 80

72. Piping size required to connect the potable water supply to the distribution system is determined by ______.
   A. the inside diameter of the piping
   B. the outside diameter of the piping.
   C. the length of the water system.
   D. the number of fixtures.

73. Which of the following is the most probable cause of a water pump to periodically run (cycle) when all fixtures are turned off?
   A. The water tank is almost empty.
   B. The inlet line to the water pump is clogged.
   C. There is a water leak in the system.
   D. Air is leaking into the inlet hose fittings.

74. A ______ must be located at any city water service connection if the water distribution system has a non-pressurized water tank and is connected to city water.
   A. pressure gauge
   B. pressure relief valve
   C. check valve
   D. emergency cutoff valve

75. What is required to avoid having to fill the entire water heater with antifreeze?
   A. Hot water tank check valve bypass.
   B. Anode valve bypass kit.
   C. Hot water tank siphon hose valve.
D. Hot water tank bypass kit.

76. Pick the correct order for components of a flowing fresh water system. (Not all components are listed).
   A. Tank, in-line strainer, accumulator, holding tank.
   B. In-line strainer, faucet, check valve, pump.
   C. Tank, accumulator, pump, in-line strainer.
   D. Tank, pump, in-line strainer, faucet.

77. A wet vent is one that ________.
   A. has the sewer cap missing from the roof
   B. may be connected to the black and gray tanks simultaneously
   C. may have a sink drain connected to it
   D. can terminate without extending through the roof

78. ABS and polyethylene holding tanks can be welded.
   A. True.
   B. Neither can be successfully welded.
   C. Only ABS.
   D. Only polyethylene.

79. Can soft plastic flex tubing be used in a RV drainage system?
   A. Never.
   B. Only on some small systems.
   C. Only when using a portable liquid waste holding tank.
   D. Both B and C.

80. Demand pumps typically produce ________________.
   A. 40 - 50 PSI
   B. 50 - 60 PSI
   C. 60 - 80 PSI
   D. None of the above.

81. Waste system vents ________.
   A. Allow methane gas to escape the holding tank.
   B. Are required on all holding tanks and each fixture.
   C. May discharge through the side wall of the RV.
   D. All the above.

82. An RV holding tank drain outlet must ________.
   A. terminate on the left side of the RV within 22.5 feet of the rear
   B. all be a minimum 3” in diameter
   C. be positioned aft of the rear axle
   D. None the above.

83. The type of fittings used for rigid copper piping are ________.
   A. sweated
   B. flared
C. threaded
D. None of the above.

84. When running waste water piping, secure the piping with hangers ____________.
   A. spaced every two feet
   B. spaced every four feet
   C. spaced every six feet
   D. only when passing through a wall or a frame member

85. When full, a forty-gallon tank of water will weigh about ____________.
   A. 290 pounds
   B. 310 pounds
   C. 330 pounds
   D. 350 pounds

86. At 40 PSI or more, the typical water pump may draw ______________.
   A. 3 - 10 amps
   B. upwards of 15 amps
   C. more current than is available
   D. None of the above.

The answer key can be found on the next page.
Plumbing Practice Questions Answer Key

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