

DIRECTIONS: Read the entire question carefully. Circle the best answer.

ELECTRICAL

1. **What is the standard unit used to measure electrical power?**
A. Amperes B. Watts C. Volts D. Kilowatts
2. **Twelve gauge wire is rated to carry how many amperes?**
A. 5 B. 10 C. 15 D. 20
3. **What color wire is normally the "hot" wire on a residential 110V circuit?**
A. White B. Green C. Black D. Bare
4. **What type wire is normally used on a 15A residential circuit?**
A. 10-2 w/grnd B. 12-2 w/grnd C. 14-2 w/grnd D. 16-2 w/grnd
5. **What is the most common reason for loss of power to a circuit when the breaker hasn't tripped?**
A. loose connection or broken wire B. low wattage
C. short D. overloaded circuit
6. **The typical three conductor circuit has a color coding of white, black & green leads that indicate which of the following?**
A. white/hot green/neutral black/ground
B. white/neutral green/ground black/hot
C. white/ground green/hot black/neutral
D. white/hot green/ground black/neutral

7. **Switches are, by code, wired to?**
- A. neutral bus bar B. ground lead
C. neutral lead D. hot lead
8. **The amperage load of a circuit is determined by which of the following methods?**
- A. watts divided by volts B. volts divided by watts
C. volts times watts D. volts minus watts
9. **Acceptable receptacles and switches for aluminum wiring are coded with?**
- A. AL-REC B. CO-ALR C. REC-AL D. REC-ALUM
10. **Which meter is most commonly used to test a circuits load?**
- A. Volt meter B. Amp-probe C. OHM meter D. Wiggy

PLUMBING

11. **Faucets dripping from the spout are usually the result of:**
- A. faulty seats & springs B. faulty cartridge
C. both A & B D. faulty aerator
12. **The dishwasher air gap is installed to?**
- A. prevent pressure build-up in drain lines
B. disallow syphoning of waste water back into appliance
C. plug the fourth hole in the sink
D. none of the above

13. **If a number of units are serviced by a common hot water boiler and a long period of time is required to obtain hot water to the furthest unit, the culprit in most cases would be?**
- A. low water pressure B. faulty gas control valve
C. faulty boiler D. faulty recirculation pump
14. **Plumbing vent pipes are installed to?**
- A. provide access for clean-out B. release sewer gases to free air
C. provide overflow for plugged lines D. none of the preceding
15. **Low water pressure in both hot and cold water at one faucet fixture in a unit probably would be?**
- A. plugged water line B. dirty aerator
C. faulty angle stop D. faulty faucet fixture
16. **A constantly running toilet is due to?**
- A. float ball full of water B. defective ball cock assembly
C. defective tank stopper D. any of the above
17. **The proper pipe fitting to prevent electrolysis when connecting dissimilar metals is?**
- A. plastic B. dielectric C. CPVC D. ABS

18. **Apartment #2 is underneath Apartment #12. The occupants in #2 say that water is coming into their bathroom through the overhead vent every time the residents upstairs take a shower. What is the possible cause?**
- A. Shower drain pipe is leaking
 - B. No shower curtain in Apt. #12
 - C. Leak in the pipe between the diverter and shower head
 - D. Any of the above
19. **Where is a P-Trap located?**
- A. Under the dishwasher
 - B. Under the sink
 - C. Behind the refrigerator
 - D. None of the above
20. **How would you remove a lodged obstruction from a toilet?**
- A. Plunger
 - B. Toilet Auger
 - C. Garden hose
 - D. All of the above

APPLIANCE

21. **The normal cause for an electric range not heating to full temperature is due to a faulty?**
- A. breaker
 - B. thermostat
 - C. bake element
 - D. all of the above
22. **Dishwasher failing to drain properly is the result of?**
- A. clogged air gap
 - B. clogged drain hose
 - C. clogged sump
 - D. all of the above

23. **The heat in an oven cannot be controlled. The possible problem is?**
- A. circuit breaker has tripped B. bad timer
C. bad thermostat D. don't know
24. **An apartment with a 40 gallon hot water heater has hot water, but not enough, even if the hot water hasn't been used all day. The malfunction of which element would give that symptom?**
- A. Top B. Bottom C. Neither
25. **How many thermostats does it take to maintain the temperature in both compartments of a refrigerator?**
- A. 4 B. 2 C. 1 D. 3
26. **What would you do to test a high-limit thermostat on a dryer?**
- A. DPD pH Test using a Taylor kit
B. Continuity test using an ohm meter
C. Voltage test using a amprobe
D. Temperature test using a digital thermometer
27. **If a dishwasher hums, but the motor will not run, the probable cause is:**
- A. The fill valve solenoid is malfunctioning
B. The seal is frozen
C. The timer is malfunctioning
28. **A washing machine fails to drain. What is the probable cause?**
- A. blocked sewer line B. timer set incorrectly
C. pump failure D. disconnected hose

29. **After changing out an element on a water heater, you should always do what before turning the circuit breaker back on?**
- A. Fill out the warranty forms
 - B. Set the thermostat
 - C. Fill the tank with water
 - D. All of the above
30. **The pilot light on a standing pilot water heater won't stay lit. What might be causing the problem?**
- A. The ignitor
 - B. The thermocouple
 - C. The thermostat

POOL

31. **If the PH of the water is low, what should be added to bring it up?**
- A. chlorine
 - B. soda ash
 - C. muratic acid
 - D. "DE"
32. **Which algae is the slowest to grow but the most difficult to get rid of?**
- A. green
 - B. black
 - C. yellow
 - D. creeping
33. **The ideal PH level is?**
- A. 6.8
 - B. 7.0
 - C. 8.2
 - D. 7.4
34. **When vacuuming a pool the vacuum line is connected to?**
- A. main drain
 - B. sewer
 - C. skimmer
 - D. irrigation
35. **To lower the PH level, you would add?**
- A. chlorine
 - B. soda ash
 - C. muratic acid
 - D. bicarb

36. **What is the maximum allowable temperature for a spa?**
A. 104 degrees B. 98 degrees C. 100 degrees D. 103 degrees
37. **If the pump will not prime the problem is generally?**
A. Low DE B. air leak C. low water D. low PH
38. **What component keeps pool water from entering the pump motor?**
A. O-ring B. Silicone C. Pump basket D. mechanical seal
39. **The multi-port valve on a sand filter is to?**
A. Connect several pools B. Rinse and clean filter media
C. Fill pool with water D. Connect spa and pool
40. **The purpose of the pool heater flow switch is to?**
A. Protect heater from burnout B. Monitor chemical feed
C. Start and stop heater D. Measure water flow

SAFETY

41. **How often are fire extinguishers to be inspected?**
A. 6 months B. 12 months C. 18 months D. 24 months
42. **What type fire extinguisher is acceptable for extinguishing most types of fires?**
A. ABC B. CO2 C. H2O D. none of the
above
- An aluminum ladder can be used near electrical sources if it has rubber feet on the bottom?**
A. True B. False

43. How far must a ladder extend beyond the roof line if you are going to climb onto the structure?
- A. 1 foot B. 3 feet C. 10 feet D. none of the above
44. The base of a ladder should be placed so that it is one foot away from the structure for every four feet of height to the point where the ladder rests against the building.
- A. True B. False
45. A stepladder can be leaned against a structure if it is secured at the bottom.
- A. True B. False
46. The main drain in a swimming pool must be visible at all times.
- A. True B. False
47. Pool depth marking are encouraged but not required for irregularly shaped swimming pools.
- A. True B. False
48. The apartment smoke detector will signal the Fire Department if activated.
- A. True B. False
49. Which of the following should NOT be done if you suspect a gas leak?
- A. Open all doors and windows
B. Turn on lights to locate pipes
C. Turn off gas at main valve