Residential Networks: System Design and Installation

Version 2.0 02/17/06

How to Use This Exam

This exam is intended to measure your understanding of the material presented in the Residential Networks course. The exam consists of 50 questions taken from the material presented in the course and all answers can be found either in the video or in the course workbook. The questions generally follow the order of the material presented in the course.

This is an open book, open video exam. You are encouraged to look for answers in the workbook and the video, therefore it is assumed that you will be able to review the video while you are taking the test.

Taking the Exam

• The recommended time limit for taking the exam is 2 hours.

• The minimum passing score is 74% (37 answers correct).

• It is best to take the exam shortly after viewing the video and reviewing the material in the Workbook. Review the portion of the DVD that corresponds to the section of the exam being worked on.

Signing the Exam

In order to be eligible for a Certificate of Completion, you must sign the exam stating the you have taken the exam without the assistance from anyone else.

Feedback

If you have questions about any of the items in the exam, please contact us at grayson@trainingdept.com. We will update the exam from time to time to reflect corrections and clarifications.

Residential Networks System Design and Installation Examination

Name _____

I certify that I have taken this exam without assistance from anyone.

Signature _____ **Date** _____

Enter the address you would like us to mail your Certificate

_____

_____

_____

Directions
Each of the questions or incomplete statements listed below is followed by possible answers. Read each question carefully and completely before you attempt to answer it. Choose the answer that you believe BEST answers the question or completes the statement and circle that answer directly on this sheet.

1. A voice line cross-connect
   a. can be performed by an external device plugged into the voice wall jack
   b. can be accomplished by cross-wiring at the voice wall jack
   c. should not be performed in the distribution center
   d. is always performed in the distribution center

2. Primary over-voltage protection is performed at
   a. the building grounding electrode
   b. the primary building load center
   c. the external service providers NID or grounding block
   d. the voice line surge protector

3. TIA-570A recommends that a room should have outlets placed so that the maximum distance between outlets along an unbroken wall should be
   a. 37 feet
   b. 25 feet
   c. 25 meters
   d. 12 feet

4. Which of the following is NOT a function of the structured cabling distribution center?
   a. It provides the necessary equipment to support each network
   b. It provides primary over-voltage protection for each network
   c. It terminates external services to internal networks
   d. It provides a means to easily connect outlets to external services

5. The service providers "demarcation point" provides
   a. a secondary disconnect function

b. surge protection for all primary circuits
c. a service disconnect on the outside of the house
d. an auxiliary disconnect function

6. TIA-570A recommends the maximum length of any branch cable should be _____ from the distribution device to the outlet.
a. 295 ft
b. 100 meters
c. 90 feet
d. not less than 90 meters

7. Which of the following is NOT defined in the TIA-570 standard?
a. a telecom distribution/cross-connect device
b. performing the ISP signal level testing
c. the type of coax cable to be installed
d. proper TP jack wiring

8. A 100Base-T network can support a maximum of _____ hubs or switches between any two devices
a. four
b. three
c. one
d. two

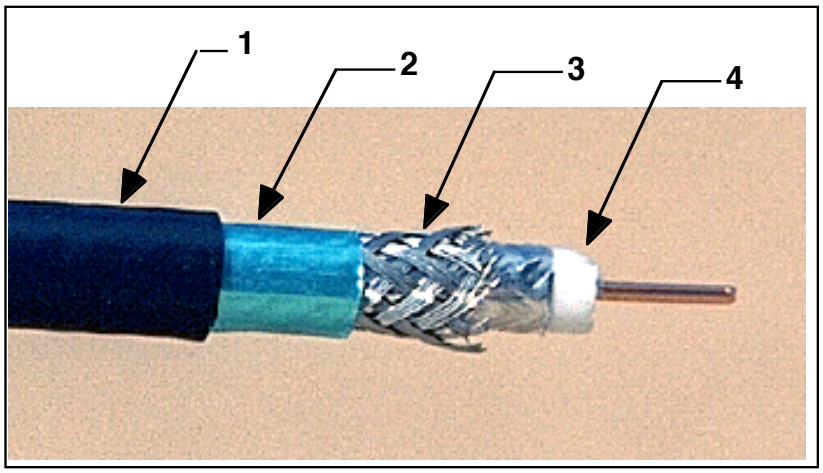
9. Which of the following statements about a switch is true?
a. A switch is never built into another device
b. A switch forwards IP packets to the Internet
c. A switch can isolate bandwidth to two devices at a time
d. A switch typically has 4 to 8 ports

10. Ethernet uses the _____ pairs in a UTP cable.
a. blue and green
b. green and brown
c. orange and green
d. orange and blue

11. Which of the following is NOT TRUE about a router?
a. A router often has a built-in switch
b. A router supplies IP addresses to other devices on the LAN
c. A router routes packets to/from a WAN
d. A router can provide audio source switching

12. A 100Base-T network requires _____ cable or better to provide reliable transmission
a. CAT6
b. CAT5

c. CAT5e
d. CAT3

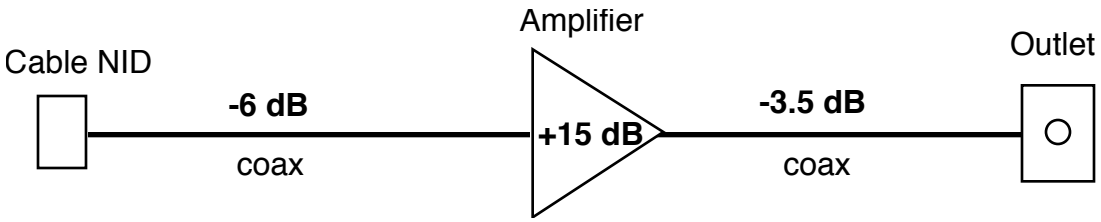


13. In the above diagram of coax cable the part labeled (4) is
    a. the center jacket
    b. the buffer
    c. the dielectric
    d. the center foam

14. The TP cable you are about to install is marked with "CMR" every few feet. This means it is OK to install in
    a. exterior walls
    b. risers
    c. attics
    d. all of the above

15. CAT5e TP cable is rated for
    a. 100 Mb/s service
    b. 250 MHz service
    c. 250 Mb/s service
    d. none of the above

16. An 8-pin modular jack wired to T568A has the
    a. brown wire on pin 8 and the brown/white wire on pin 1
    b. green wire on pin 6 and the green/white wire on pin 3
    c. orange wire on pin 2 and the orange/white wire on pin 1
    d. orange wire on pin 6 and the orange/white wire on pin 3



17. The diagram above shows the gain and loss of two lengths of coax and a distribution amplifier at 800 MHz. What is the overall gain or loss from the cable NID to the outlet?
    a. +5.5 dB
    b. –9.5 dB
    c. –19.5 dB
    d. +9.5 dB

18. The reason frequency agile modulators require two channels of bandwidth is _____
    a. because they don't use the same guard band as cable signals
    b. because they output both sidebands of a modulated TV carrier
    c. still a mystery
    d. because they output two separate channels at one time

19. INTERNAL coax cables
    a. distribute internal telephone service
    b. support distribution of in-home generated signals from the network interface to each outlet in the home.
    c. bring in-home generated signals back to the distribution device for mixing with external signals
    d. bring in-home generated telecom services back to the distribution device for mixing with external signals

20. The design of the RF distribution system should insure a signal level of _____ at each EXTERNAL outlet location for any source.
    a. 0 to +10dBmV
    b. 0 to +10dB
    c. 0 to +15dB
    d. –10 to +10 dBmV

21. An amplifier is used for the external source signal in an RF distribution system to
    a. overcome the loss in the terminators
    b. overcome the loss of the splitter used to support multiple cable runs to the outlets
    c. overcome the loss in the coax from the distribution center to outlets
    d. b and c

22. When designing the data network you will need to determine
    a. whether you need to distribute audio over the CAT5 cable
    b. the distance from the switch to the router
    c. the number of switch ports needed to support the anticipated networked devices
    d. how many routers you will need

23. Which of the following is NOT a typical design step for the RF distribution network
    a. Determine a channel allocation plan
    b. Determine source signal levels and destination signal levels
    c. Perform the gain and loss calculation
    d. Perform the ISP signal level testing

24. When planning the RF distribution network installation, you should plan on at least _____ RG6 cables to the roof (or outside) location.
    a. six
    b. four
    c. ten
    d. eight

25. The location you plan for a wireless access point should be
    a. close to a patio or porch
    b. close to the distribution center
    c. high and centrally located
    d. all of the above

26. Which of the following is NOT a consideration in selecting a location for the distribution center equipment?
    a. Whether the location provides good wire run accessibility
    b. Whether the location has easy access
    c. Whether insulated flooring can be installed
    d. Whether the space is conditioned

27. The marked plans for the job should show each outlet or device indexed to the
    a. cable schedule
    b. equipment list
    c. TIA-570A specification
    d. distribution center

28. The cable schedule is used by the installer to
    a. determine which cable goes to each rough-in location
    b. verify that each cable was tested
    c. verify the correct cable was pulled
    d. all of the above

29. Off-air signals will have a variation of at least
    a. -10 to +20 microvolts
    b. -10 to +30 dBmV
    c. -30 to +30 dBmV
    d. -10 to +30 microvolts

30. The maximum pull tension for CAT 5 cable is
    a. 50 lbs
    b. 25 lbs
    c. 35 lbs
    d. none of the above

31. The label applied to each cable prior to pulling the cable should come from
    a. a list of cable ID's supplied by the cable manufacturer
    b. the ID given to the cable on the plans
    c. the outlet ID on the equipment list
    d. the cable ID on the cable schedule

32. When securing cables at an outlet rough-in location you should make sure
    a. the cables can be easily retrieved at trim-out
    b. there is no more than 25 lbs of tension on the TP cable
    c. you tie the cables securely
    d. the label is easily visible

33. When securing your cable to studs and rafters you should use
    a. T25 staples
    b. a 25 lb. hammer
    c. cable clamps that allow the cable to slide through the clamp
    d. the ‘U’ shape staples used by electrical contractors

34. The cable schedule
    a. identifies what equipment should be installed at each outlet location
    b. identifies which cables should be terminated at each outlet location
    c. lists the equipment that will be attached to each outlet jack
    d. lists the bandwidth used by each cable

35. You can co-locate a low-voltage outlet next to a high-voltage (120V) outlet as long as
    a. you don't tell anyone about it
    b. local building codes authorize it
    c. the mounting height above floor level is the same
    d. they are separated by a non-metallic barrier

36. The coax cable length from a DISH network LNB to the receiver should not exceed
    a. 125 ft. for RG6
    b. 125 ft. for RG11
    c. 225 ft. for RG11
    d. 225 ft. for RG6

37. You should allow extra space in the distribution equipment enclosures for
    a. sports equipment
    b. outlet hardware
    c. power supplies and outlets
    d. modulators

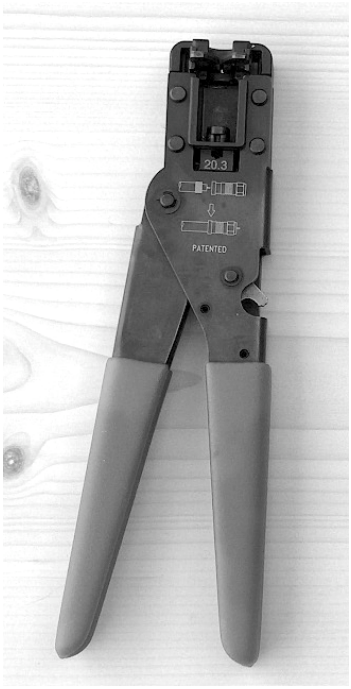
38. Your final walk-through after the prewire should include
    a. leaving a copy of the prewire invoice with the owner/builder
    b. a final testing of the grounding system
    c. a check to make sure you removed all the tags
    d. a double check for any missed cables on the cable schedule

39. The default height for volume control rough-in hardware is
    a. 48" from floor to center of rough-in box
    b. 48" from floor to bottom hole in the rough-in box
    c. 6" above the height of light switch rough-in boxes
    d. 58" from floor to center of rough-in box

40. A tone generator and tone detector is generally used to
    a. perform static testing of coax and TP cables
    b. locate mislabeled cables
    c. locate a fault in a TP cable
    d. find a kink in coax cable

41. Which of the following cable tests are required?
    a. Verification testing of all TP and coax cables
    b. Verification testing of TP cable
    c. Certification testing of TP cable
    d. Dynamic testing of all coax cables

42. Testing the speaker installations is required since it may uncover which of the following?
    a. The speaker connected to the wrong hub
    b. A kink in the cable
    c. Too much attenuation in the speaker cable
    d. A rattle caused by loose material in the wall or wallboard



43. The tool shown on the left is used to
    a. strip the insulation off a coax cable.
    b. secure a coax snap-and-seal connector.
    c. crimp an F hex connector.
    d. force a TP pair wire into an insulation displacement contact.

44. When installing outlet hardware you should
    a. label each jack that will be used.
    b. stay consistent on the placement of jacks throughout the installation.
    c. make sure TP and coax jacks are the same color.
    d. not install more jacks at any outlet than necessary.

45. When terminating a TP cable to a modular jack, you should use
    a. the T568A wiring configuration.
    b. the TIA-568 wiring configuration.
    c. a TIA-568 jack.
    d. the T568B wiring configuration.

46. You should always keep a copy of the installation documentation
    a. in a safe deposit box.
    b. on the site as well as at the office.
    c. on the customers computer.
    d. in the distribution center.

47. The output level of all modulators should be set to provide an output signal level at each EXTERNAL outlet
    a. between 0 to +10 dBmV.
    b. between -10 to +10 dBmV.
    c. not to exceed the input overload level of the receiver.
    d. not to exceed +15 dBmV.

48. System configuration of the data network should include
    a. selecting an ISP for the customer.
    b. assigning sources and zones .
    c. configuring the router and router security.
    d. setting the data rate for the cable modem.

49. Documenting the configuration of the data network is done on
    a. the cable schedule.
    b. the network configuration worksheet.
    c. the equipment schedule.
    d. the equipment worksheet.

50. When adjusting the output levels of the RF distribution system, you should check the output levels at

a. both the INTERNAL and EXTERNAL outlets.
b. the cable service providers NID.
c. the input to the EXTERNAL splitter.
d. the farthest and closest EXTERNAL outlet from the distribution center.