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AVIXA CTS Exam Certification Details:

Schedule Exam<u>Pearson VUE</u>Exam NameAVIXA Certified Technology Specialist (CTS)MemberExam Price\$375(USD)Duration150 minsBooks / Training<u>Candidate Handbook</u>Non-Member Exam Price\$475(USD)

Axis CTS Exam Syllabus Topics:

TopicDetailsTopic 1- Big Data Storage and Management: For data engineers and storage administrators, this part addresses the methodologies and technologies for efficient storage, management, and processing of large-scale data sets.Topic 2- Big Data Overview: For data analysts and IT professionals, this section covers the basic concepts and principles of big data, including its characteristics, significance, and applications.Topic 3- Big Data Analysis and Processing: For data scientists and analysts, this section covers various techniques, tools, and frameworks used for analyzing and processing big data to derive actionable insights.Topic 4- Huawei Big Data Solutions: For big data solution architects and administrators, this domain focuses on Huawei's specific big data products, their features, and practical implementation strategies.



Q51. Which section of the Ohm's Law chart should be used to calculate values expressed in Ohms? Select the answer by clicking anywhere within the correct quadrant.



Explanation:

Ohm's Law is a fundamental principle used in electrical engineering and physics to describe the relationship between voltage (V), current (I), resistance (R), and power (P). The Ohm's Law chart is divided into four quadrants, each representing different formulas and relationships among these quantities.

To calculate values expressed in Ohms (which represent resistance, R), you should use Quadrant D. This quadrant contains formulas that solve for resistance (R), using various combinations of voltage (V), current (I), and power (P):

* $R=VIR = frac\{V\}\{I\}R=IV$

* $R=V2PR = frac \{V2\} \{P\}R=PV2$

* $R=PI2R = frac\{P\}\{I2\}R=I2P$

These formulas are derived from Ohm's Law and the power equations, providing different ways to calculate resistance based on the available information.

References:

* Ohm's Law: Explains the relationship between voltage, current, and resistance.

* Power Formulas: Derived from the basic Ohm's Law equations and used to relate power with resistance, voltage, and current.

To further verify and detail the usage of Ohm's Law chart, you can refer to Axis Technology Specialist documentation or any standard electrical engineering textbooks which provide detailed explanations of these formulas and their applications.

Top of Form

Bottom of Form

Q52. How frequently should a personal fall arrest harness be inspected?

* weekly

- * before each use
- * at the beginning of each project
- * at the beginning of each work day

A personal fall arrest harness should be inspected before each use. This is a critical safety measure to ensure that the harness is in good condition and will provide the necessary protection in case of a fall. Regular inspections can identify any wear, damage, or other issues that could compromise the safety of the user.

References:

* Axis Communications – Safety and Compliance Standards

* Occupational Safety and Health Administration (OSHA) Guidelines

Q53. Which connector is typically used for ease of termination for various signal types?

*

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Connector A is a BNC (Bayonet Neill-Concelman) connector, which is commonly used for a variety of signal types, including video (such as composite and SDI), RF signals, and even some data signals. It is known for its ease of termination, with a simple twist-lock mechanism that ensures secure and quick connections. The BNC connector's versatility and reliability make it popular in professional AV environments.

* Connector B is a VGA (Video Graphics Array) connector, typically used for analog video signals, particularly between computers and monitors. However, VGA connectors are not typically associated with ease of termination due to their multiple pins and more complex soldering requirements compared to the quick-connect design of BNC connectors.

CTS Technology Specialist ReferenceThe CTS curriculum highlights BNC connectors as versatile and easy- to-use, suitable for a range of AV signal types. Their locking mechanism and straightforward assembly process make them a preferred choice for AV professionals needing quick and reliable connections across various applications.

Q54. What frequency is identified by the numbers above each slider of a graphic equalizer?



* center

- * lowest
- * highest
- * secondary

Q55. Which type of contract involves ongoing support for an AV system, regardless of the age of the facility or who did the initial installation?

- * system warranty
- * service agreement
- * manufacturer warranty
- * preventive maintenance

A service agreement involves ongoing support for an AV system, regardless of the age of the facility or who did the initial installation. This type of contract ensures that the AV system is maintained and serviced regularly, providing long-term support and upkeep. Axis documentation outlines service agreements as essential for ensuring the continued reliability and performance of AV systems, providing clients with peace of mind and consistent technical support.

Q56. When compared to Listener 4, which listener simultaneously hears the speaker at +6db? Select the answer by clicking on the correct listener.



Explanation:

Listener 2

In sound propagation, every doubling of distance from a sound source generally results in a decrease of approximately 6 dB in sound level due to the inverse square law. Conversely, when moving closer to the sound source, the sound level increases by approximately 6 dB each time the distance is halved.

Given Listener 4 is at 20 feet from the speaker:

* Listener 3 is at 15 feet, which is closer but not a direct halving of Listener 4's distance, so the change is less than 6 dB.

* Listener 2 is at 10 feet, which is half the distance of Listener 4 (20 feet). This halving of distance results in a sound level increase of approximately 6 dB.

* Listener 1 is at 5 feet, which is closer than Listener 2 and results in a higher increase in dB compared to Listener 4.

CTS Technology Specialist ReferenceUnderstanding sound level changes over distance is essential in AV system design to ensure balanced audio coverage. The CTS materials cover the inverse square law extensively, explaining how sound pressure levels change as the distance from the sound source varies.

Listener 2, at half the distance from Listener 4, receives sound at +6 dB compared to Listener 4, aligning with this principle.

Q57. Which viewing category describes the usage of a display as reference for CAD drawings?

- * PV (Passive Viewing)
- * FMV (Full Motion Viewing)
- * BDM (Basic Decision Making)
- * ADM (Analytical Decision Making)

The viewing category that describes the usage of a display as a reference for CAD drawings is ADM (Analytical Decision Making). This category involves the detailed examination and interpretation of complex information, such as technical drawings or data. Displays used for ADM must have high resolution and clarity to ensure accurate analysis. Axis Technology Specialist documentation categorizes displays for analytical decision-making tasks as requiring superior visual performance to support detailed and precise work.

Q58. The contrast control sets the

- * white balance of the Image.
- * range for the hue of the image.
- * color temperature of the image.
- * range for the difference between white and black.

The contrast control on a display adjusts the range for the difference between white and black. Increasing the contrast makes the whites brighter and the blacks darker, enhancing the overall clarity and sharpness of the image. Proper contrast settings are vital for ensuring that the image displayed is visually appealing and easy to interpret, especially in varying lighting conditions.

References:

* Axis Communications – Display Settings and Calibration

* AV Technology Standards



Q59. When calibrating a loudspeaker system, which weight setting on the SPi. meter is used for its mdus>on of low frequency sound levels in the measurement?

- * Weighted
- * Weighted
- * Weighted
- * Weighted

When calibrating a loudspeaker system, the C-weighted setting on an SPL (Sound Pressure Level) meter is typically used because it provides a relatively flat frequency response, including low-frequency sound levels.

This makes it more suitable for accurately measuring the overall sound pressure level, especially in environments where low-frequency performance is critical, such as in audio and home theater systems. The C-weighted setting captures the full range of audible frequencies, ensuring a comprehensive and precise calibration.

Top of Form

Bottom of Form

Q60. The AV Project Manager is responsible for

- * schedule, budget, scope.
- * design, schedule, configuration.
- * budget, installation, maintenance.
- * configuration, scope, maintenance.

The AV Project Manager is responsible for managing the schedule, budget, and scope of a project. This encompasses ensuring the project is completed on time (schedule), within the allocated funds (budget), and meets all the agreed-upon requirements (scope).

These three aspects are often referred to as the "triple constraint" in project management and are critical for the successful completion of a project.

Q61. What frequency is identified by the numbers above each slider of a graphic equalizer?



- * center
- * lowest
- * highest
- * secondary

Q62. During a site survey, a sound pressure level (SPL) meter can be used for measuring

- * the room acoustics.
- * the ambient noise level.
- * the efficiency of the amplification.
- * distance to existing loudspeakers.

An SPL (Sound Pressure Level) meter is commonly used during a site survey to measure the ambient noise level in a room. This measurement provides a baseline for audio system design, ensuring that the sound reinforcement system can deliver adequate volume levels above the background noise.

CTS Technology Specialist ReferenceAccording to CTS materials, assessing ambient noise levels with an SPL meter is a standard step in designing sound systems, especially in environments where speech intelligibility is critical.

Q63. A cardioid subwoofer array uses delay, equalization, and

- * gating.
- * polarity.
- * phase shift.
- * compression.

In a cardioid subwoofer array, phase shift is employed along with delay and equalization to control the directivity of the sound, focusing bass energy forward and minimizing it behind. Phase shifting alters the waveforms of sound signals, contributing to the cardioid pattern that reduces bass spill to unwanted areas.

CTS Technology Specialist ReferenceThe CTS materials on sound system design explain that phase manipulation, alongside delay, is essential for cardioid subwoofer arrays to control low-frequency dispersion effectively.

Q64. Identify the cable which is LEAST susceptible to electromagnetic interference. Select the appropriate cable by clicking anywhere on the correct cable.





Explanation:

The fourth cable from the left (black coaxial cable)

The coaxial cable (the fourth cable from the left) is least susceptible to electromagnetic interference (EMI) due to its construction, which includes a central conductor surrounded by a shielding layer. This shielding, often made of metal foil or braided wire, effectively blocks external electromagnetic fields, preventing them from interfering with the signal.

Here's a breakdown of each cable type:

* Twisted Pair Cable (first from the left): Susceptible to EMI unless shielded, though twisted pairs can reduce interference somewhat.

* Multi-conductor Cable (second from the left): More susceptible to EMI, depending on the shielding used.

* Fiber Optic Cable (third from the left): Immune to EMI, as it transmits data as light rather than electrical signals.

* Coaxial Cable (fourth from the left): Highly resistant to EMI due to its shielding, making it ideal for environments with significant electrical interference.

CTS Technology Specialist ReferenceThe CTS curriculum discusses the benefits of coaxial cable in environments with potential EMI due to its robust shielding properties. It's often recommended for AV installations where EMI is a concern. Fiber optic, which is not affected by EMI, is another choice, but coaxial is traditionally favored for certain AV applications due to cost and compatibility.

Q65. A remote monitoring system's PRIMARY benefit is that it

- * reduces the need for service calls.
- * does not need to be located in the same building.
- * provides a faster response time for problem solving.
- * allows the AV team to make sure the equipment is being used properly.

The primary benefit of a remote monitoring system is that it reduces the need for service calls by allowing technicians to monitor equipment status, detect issues early, and perform diagnostics remotely. This proactive monitoring minimizes downtime and often resolves issues without the need for on-site intervention.

CTS Technology Specialist ReferenceCTS training emphasizes the value of remote monitoring in AV maintenance, highlighting its role in reducing service costs and improving system uptime by enabling early issue detection and resolution.

Q66. Based on this image, what is the aspect ratio for WUXGA?



- * 1.6:1
- * 1.78:1
- * 1.85:1
- * 2.35:1

WUXGA stands for Wide Ultra Extended Graphics Array and has a resolution of 1920 x 1200 pixels. To determine the aspect ratio, we divide the width by the height:

=1.6:1text{Aspect Ratio} = frac{1920}{1200} = 1.6:1Aspect Ratio=12001920=1.6:1 Therefore, the aspect ratio for WUXGA is 1.6:1. This aspect ratio is common for widescreen monitors and provides a wider display format compared to traditional 4:3 screens, enhancing the viewing experience for multimedia content.

Q67. In an audiovisual system where a touch panel is to be connected to the control system via the LAN, the designer may choose to use a

- * MAC address.
- * host IP address.
- * static IP address.
- * shared IP address.

Q68. What is the FIRST stage in troubleshooting an AV system?

- * evaluating possible sources of error
- * identifying the symptoms of the error
- * determining which devices are fully functional
- * reviewing the system diagram showing the connections and the signal flow

The first stage in troubleshooting an AV system is identifying the symptoms of the error. This step involves observing and documenting the specific issues or malfunctions that are occurring. By clearly understanding and articulating the symptoms, a technician can more effectively diagnose the problem and narrow down potential causes. Once the symptoms are identified, the technician can proceed to evaluate possible sources of error, check device functionality, and review system diagrams as needed.

Q69. Which section of the Ohm's Law chart would you use to calculate watts? Select the coned quadrant.





Explanation:

To calculate watts (P) using the Ohm's Law chart, you would use the sections that involve power formulas.

These sections are:

* P = V * I

- $P = I^2 * R$
- $* P = V^2 / R$

These formulas show the relationship between power (watts) and the other electrical quantities: voltage (V), current (I), and resistance (R).

Q70. The architect states that the project is in the pre-design phase. This would indicate that

- * construction is about to commence.
- * a needs analysis should be requested.
- * the reflected ceiling plan has been approved.
- * the control system is ready for implementation.

In the pre-design phase of a project, the focus is on gathering information to define requirements, goals, and constraints. A needs analysis is appropriate at this stage to identify what the client needs from the AV system, which will inform the subsequent design and planning phases.

CTS Technology Specialist ReferenceAccording to CTS guidelines, conducting a needs analysis during the pre-design phase is essential to understand client requirements and project scope before moving into design and construction phases.

Q71. What section of the color chart is used to calibrate brightness? Select the answer by clicking on the appropriate area of the chart



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Explanation:

The section with the grayscale bars (bottom row, from white to black)

Brightness calibration is typically done using the grayscale section of a color chart. The grayscale bars provide a range of luminance levels from white to black, allowing the calibration process to adjust the display so that each shade is distinct and accurately represented. Proper calibration ensures that the display shows details in both bright and dark areas of the image, achieving the correct overall brightness.

Q72. After installation, the system does not pass audio. Based on the information in the drawing, what is the MOST LIKELY cause?



- * cable lengths
- * system needs a DSP
- * phantom power is required
- * speaker requires a 70 V transformer

The microphone in the setup may require phantom power to operate. Phantom power is a DC voltage (usually

48V) supplied through the microphone cable to power condenser microphones. Without phantom power, a condenser microphone will not function, resulting in no audio being passed through the system. Since the drawing shows a microphone connected to a digital audio transmitter, it's likely a condenser microphone, and if it isn't receiving phantom power, this would be the most probable cause of the system not passing audio.

Q73. When connecting two switches with multiple VLANs, which function should be setup in order to pass all the packets from one switch to the other?

- * trunk line
- * multicast routing
- * QoS (Quality of Service)
- * SFP (Small Form-factorPluggable)

A trunk line should be set up when connecting two switches with multiple VLANs. A trunk line allows the passage of traffic for multiple VLANs between switches. It tags the packets with the appropriate VLAN identifier, enabling the switches to properly route the traffic to the correct VLANs. This setup is essential for maintaining network segmentation and ensuring that all VLAN traffic is transmitted across the network as intended. Trunk lines are a standard networking practice for managing VLAN traffic between switches efficiently.

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