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BICSI Installer 2 - Copper Exam

BICSI INSTC_V7

Version Demo

Total Demo Questions: 13

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Topic Break Down

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QUESTION NO: 1

Which of the following steps should be performed first when an installer is pulling backbone cable from the bottom up?

A. Label cables and reels

B. Verify the proper cable run

C. Determine appropriate rope size

D. Move cable reels into place

ANSWER: B

Explanation:

Verify the proper cable run should be completed first because a bottom-up backbone pull must begin with confirmation that the planned pathway, endpoints, and route correspond to the approved installation documentation. The installer needs to establish that the cable is being placed in the intended backbone pathway and that the route is continuous, accessible, and suitable for the cable before staging reels or making pulling preparations. This verification also supports compliance with pathway capacity, bend-radius protection, firestopping locations, and separation requirements that may affect the installation. Confirming the run before handling cable prevents an incorrect pull, avoids unnecessary cable damage or rework, and allows the crew to coordinate safely between the lower and upper locations. It is especially important for vertical pathways because communication and route confirmation are necessary before cable is sent upward through sleeves, conduits, riser pathways, or other vertical supports. BICSI installation practices emphasize following approved drawings and verifying pathways as part of planning and executing structured-cabling work. See BICSI's cabling-installation resources at https://www.bicsi.org/standards/bicsi-standards and its Installer training information at https://www.bicsi.org/education-certification/installer-training.

QUESTION NO: 2

Which of the following components is used to bond the electrical system's grounding electrode system to the PBB?

A. RBB

B. BBC

C. TBB

D. TBC

ANSWER: D

Explanation:

TBC is correct because the telecommunications bonding conductor is the conductor used to bond the primary bonding busbar (PBB) to the building electrical grounding electrode system. This connection establishes the intentional interface between the telecommunications bonding infrastructure and the premises electrical grounding system. Its purpose is to maintain an equipotential reference, provide a controlled path for fault and surge-related current, and support the effective operation of the telecommunications bonding network.

The PBB is the principal busbar for the telecommunications bonding system. The TBC is sized and installed in accordance with applicable electrical-code and telecommunications-bonding requirements, with the connection made to the building grounding electrode system or an approved point of connection to that system. This arrangement is fundamental to a properly coordinated bonding system: it ties telecommunications metallic pathways and equipment bonding conductors to the building's grounding reference without treating the telecommunications system as an isolated ground. BICSI installation practice follows the grounding and bonding principles established by telecommunications infrastructure standards and the National Electrical Code. See the BICSI standards overview and the NFPA 70 (National Electrical Code) information page.

QUESTION NO: 3

A grey backboard should be used to identify backbone cable?

A. Second-level

B. Intrabuilding

C. First-level

ANSWER: A

Explanation:

Second-level is correct. In the telecommunications-administration color scheme used for infrastructure identification, gray identifies second-level backbone cabling and its associated termination fields or backboards. A second-level backbone is the portion of the backbone cabling system that extends between intermediate distribution locations, supporting the hierarchy beyond the first-level backbone. Applying the prescribed gray identification consistently helps installers, technicians, and future maintainers quickly recognize the cable system level during moves, additions, changes, troubleshooting, and documentation updates.

Color identification is an administrative aid rather than a substitute for permanent labels and records. The backboard should therefore also have clear, durable labels that correspond to the cable identifiers, termination hardware, pathways, and administration records. This coordinated approach supports the structured-cabling practices emphasized in BICSI installation guidance and aligns with the telecommunications-infrastructure administration principles of the ANSI/TIA-606 series. See BICSI's standards resources at BICSI Standards and the TIA-606 administration standard overview at ANSI/TIA-606-C.

QUESTION NO: 4

Which of the following is used to express system gain and loss?

A. Ohms

B. Henries

C. Farads

D. Decibel (dB)

ANSWER: D

Explanation:

Decibel (dB) is used to express system gain and loss because it represents a logarithmic ratio between two power levels, or between two voltage levels when the circuit impedance is unchanged. In telecommunications and structured-cabling work, losses such as insertion loss/attenuation and gains produced by active equipment are commonly stated in dB. The logarithmic scale is especially useful because gains and losses through cascaded components can be combined algebraically: gains are added and losses are subtracted. For example, if a signal passes through a component with 3 dB of loss, its power is reduced to approximately one-half of its original level; a 3 dB gain approximately doubles power. This makes dB a practical common unit for describing the overall gain or loss budget of a transmission system. The decibel itself expresses a ratio rather than an absolute electrical quantity, so a reference level is needed when an absolute value is being specified, as in dBm or dBV. The International Telecommunication Union defines the bel and decibel as logarithmic measures of ratios, and NIST provides guidance on their use in measurements. See ITU-R Recommendation V.574 and NIST guidance on logarithmic units.

QUESTION NO: 5

Which of the following is the bonding connection point for telecommunications systems and equipment in the area by a telecommunication space?

A. SBB

B. RBB

C. BBC

D. TEBC

ANSWER: A

Explanation:

SBB is correct because a system bonding bar is the common bonding connection point for telecommunications systems and equipment serving the area associated with a telecommunications space. It provides an organized, accessible location at which bonding conductors from applicable telecommunications equipment and systems can be connected, supporting electrical continuity and equipotential bonding. This common connection point helps provide a controlled path for fault current and induced voltages, while reducing differences in electrical potential among interconnected metallic telecommunications components.

Proper bonding is a fundamental part of the telecommunications bonding and grounding infrastructure. The installation must use listed bonding hardware and appropriately sized, properly terminated conductors, and it must be integrated with the building's grounding and bonding system in accordance with the applicable project design and governing electrical requirements. BICSI installation practices emphasize maintaining permanent, low-impedance bonding paths and making connection points accessible for inspection and maintenance. The SBB therefore serves the described area-level equipment and system bonding function. See BICSI's standards resources at BICSI Standards and the telecommunications bonding and grounding standard overview at TIA-607-E.

QUESTION NO: 6

Which of the following PPE items MUST be worn at all times when you are working with or handling OF?

A. Fall Protection

B. Eye Protection

C. Hearing Protection

D. Breathing Protection

ANSWER: B

Explanation:

Eye Protection is required when working with or handling optical fiber (OF). Fiber-optic work creates a persistent eye-injury hazard because stripped glass fibers, tiny cleaved end fragments, and airborne debris can be difficult or impossible to see. These fragments are sharp, can become embedded in the eye, and should never be handled or removed casually. Safety glasses with side shields provide the basic continuous barrier needed while preparing, stripping, cleaving, terminating, inspecting, or cleaning fiber cable and components.

Safe fiber practice also includes maintaining a designated scrap container for all fiber off-cuts, keeping food and drinks away from the work area, and cleaning the work surface with appropriate methods after completing the task. These practices complement—not replace—the continual use of eye protection. OSHA's general industry requirements state that employers must ensure appropriate eye or face protection is used when workers are exposed to hazards from flying particles or similar eye hazards. Optical-fiber fragments fit the practical safety concern addressed by this protection requirement. See OSHA's Eye and Face Protection standard, 29 CFR 1910.133 and its Eye and Face Protection eTool for applicable protective-equipment guidance.

QUESTION NO: 7

Which of the following makes the biggest impression on a customer when you are communicating via email?

A. Choice of words

B. Body language

C. Tone of voice

ANSWER: A

Explanation:

Choice of words makes the biggest impression because email communication is primarily conveyed through written language. A customer interprets professionalism, clarity, competence, courtesy, and the intended level of urgency from the specific words selected and how the message is organized. Clear, respectful, customer-focused wording helps ensure that the recipient understands the purpose of the message, the required action, and any relevant details without needing immediate clarification. In installation work, this is especially important when communicating schedules, service impacts, site-access needs, test results, change information, or closeout items. Effective professional emails use direct language, an appropriate greeting and closing, accurate technical terms, and concise statements that avoid ambiguity. Careful word choice also reduces the risk that a neutral operational message will be interpreted as dismissive or unclear. Purdue Online Writing Lab notes that professional workplace correspondence should be clear, concise, and audience-centered: Purdue OWL: Professional Writing. Guidance on plain language likewise emphasizes using words that readers can readily understand so they can find and act on needed information: PlainLanguage.gov: Choose Your Words Carefully.

QUESTION NO: 8

Electrical power (P) is measured in ?

A. Ohms

B. Farads

C. henries

D. Watts

ANSWER: D

Explanation:

Electrical power (P) is measured in watts. A watt is the SI-derived unit for the rate at which electrical energy is transferred or converted. In a DC circuit, power is commonly calculated as P = V × I, where voltage is expressed in volts and current in amperes; multiplying these quantities produces watts. For example, equipment supplied at 12 volts and drawing 2 amperes consumes 24 watts. In telecommunications and structured-cabling work, recognizing power units supports safe work around powering equipment, such as PoE systems, and helps installers distinguish power-related specifications from resistance, capacitance, and inductance measurements. The watt is also expressible as one joule per second, emphasizing that it describes an energy-transfer rate rather than a stored electrical property. The National Institute of Standards and Technology identifies the watt (W) as the coherent derived SI unit of power. See NIST: The International System of Units and BIPM: SI Brochure.

QUESTION NO: 9

Which of the following terms is used to describe mechanical firestop systems?

A. Endothermic

B. Intumescent

C. Ablative

D. Elastomeric

ANSWER: D

Explanation:

Elastomeric is the term used to describe mechanical firestop systems in this context. An elastomeric firestop relies on resilient, rubber-like material characteristics and mechanical compression to maintain a tight seal around a cable, conduit, or other penetration. When the system is installed, its components are compressed within the opening; the material's elastic recovery produces sustained contact pressure against the penetrating item and the surrounding substrate. This makes elastomeric mechanical systems particularly useful where a penetration may need to be modified, where cables are added or removed, or where normal building movement must be accommodated without losing the integrity of the firestop seal.

The essential installation requirement is to use the exact listed and labeled system for the rated wall or floor assembly, penetration type, annular space, and required fire-resistance rating. The completed installation must follow the manufacturer's instructions and the tested system details, including the specified component arrangement and compression. UL's firestop resources explain the importance of selecting and installing tested firestop systems, while BICSI Installer education addresses proper installation practices for telecommunications infrastructure penetrations. See UL Firestop Systems and BICSI Installer 2 Certification.

QUESTION NO: 10

Which of the following must be measured before the length of a coaxial cable can be calculated?

A. Propagation delay

B. Insertion loss

C. DC loop resistance

D. Delay skew

ANSWER: A

Explanation:

Propagation delay is the required measurement because cable length is determined from the time required for a signal to travel through the cable, together with the signal's propagation velocity in that particular cable type. In practice, a time-domain instrument sends a signal into the coaxial cable and measures the elapsed time to a reflection, such as one produced at the far end or by a discontinuity. The tester then applies the cable's nominal velocity of propagation (NVP), also called velocity factor, to convert that measured travel time into distance. For a one-way measurement, the relationship is length = propagation delay × propagation velocity; where a reflected pulse is used, the round-trip time is divided accordingly.

This method is particularly appropriate for coaxial cabling because the dielectric material establishes the velocity factor, which is lower than the speed of light and must be correctly set in the test instrument for an accurate result. Fluke Networks describes propagation delay as the time needed for a signal to travel the length of a cable and notes that it is used in cable-length calculations. See Fluke Networks: Propagation Delay and Fluke Networks: Nominal Velocity of Propagation.

QUESTION NO: 11

Which of the following items may be used as a substitute device for a pulling eye?

A. Wire mesh grip

B. Fan-out kit

C. Innerduct

D. D rings

ANSWER: A

Explanation:

A wire mesh grip may be used as a substitute device for a pulling eye because it transfers the pulling load to the outside of the cable jacket over a distributed length. Commonly called a cable pulling grip, pulling sock, or Kellems-type grip, it tightens

around the cable as tension is applied. This provides a secure attachment point for the pulling line when a factory-installed pulling eye is unavailable or cannot be used.

For installer work, the grip must be correctly sized for the cable outside diameter, installed over a sufficient length of clean, undamaged jacket, and secured in accordance with the cable and grip manufacturer's instructions. The pulling arrangement must also maintain the manufacturer's maximum allowable pulling tension and minimum bend radius. These requirements protect conductor geometry, insulation, shielding, and overall transmission performance during installation. A properly selected wire mesh grip is therefore an accepted practical means of attaching a pulling line while avoiding concentrated stress at a single point on the cable. Manufacturer installation guidance discusses using pulling grips and observing cable-specific tension limits; see CommScope SYSTIMAX Installation Guidelines and BICSI Standards.

QUESTION NO: 12

How long does it take someone to form a first impression?

A. 10 to 15 seconds

B. 1 to 2 minutes

C. 5 to 10 minutes

D. 30 minutes to 1 hour

ANSWER: A

Explanation:

10 to 15 seconds is correct. In the installer's customer-facing work environment, a first impression is made almost immediately, through visible professionalism and initial interpersonal conduct. A customer or site representative begins assessing an installer upon the first interaction: punctual arrival, appropriate personal protective equipment and attire, grooming, body language, eye contact, introduction, and respectful communication all contribute to that rapid judgment. The practical lesson is that installers should be prepared to present a professional image before entering the work area or beginning a discussion, rather than assuming that a favorable impression will develop only after technical work is underway.

The 10-to-15-second guideline is consistent with the broader evidence that people make social evaluations very quickly. Research has found that judgments based on faces can form after extremely brief exposure, reinforcing why the opening moments of a professional interaction carry disproportionate weight. In BICSI installation practice, professionalism and effective communication support customer confidence, safe coordination with other trades, and the installer's credibility as a representative of the employer. See BICSI's Installer 2, Copper certification information and the peer-reviewed study First Impressions: Making Up Your Mind After a 100-Ms Exposure to a Face.

QUESTION NO: 13

Which of the following results from the different optical path lengths in a multimode fiber?

A. Modal dispersion

B. Chromatic dispersion

C. Attenuation

ANSWER: A

Explanation:

Modal dispersion is correct because multimode fiber supports many separate propagation paths, or modes, through its core. Light launched into the fiber does not all follow exactly the same route: some rays travel more directly along the fiber axis, while others follow longer, angled paths created by repeated reflections or gradual refraction within the core. Even though these light signals begin at nearly the same time, the differing path lengths cause them to arrive at the far end at different times. This time spreading broadens an optical pulse and is called modal dispersion (also called intermodal dispersion). It

limits the bandwidth-distance capability of multimode cabling, since adjacent pulses can eventually overlap and make the received data harder to distinguish. Graded-index multimode fiber reduces modal dispersion by varying the refractive index from the center outward, helping light that follows longer paths travel faster than light near the center. The underlying cause remains the presence of multiple modes with differing travel paths and arrival times. See the Fiber Optics Association’s discussion of multimode fiber and modal dispersion at FOA Fiber Optics Reference Guide and the BICSI information on structured cabling education at BICSI Education.