BICSI Installer 2 Copper Exam

BICSI INSTC V8

Version Demo

Total Demo Questions: 12

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QUESTION NO: 1

When using a cable lubricant in a conduit system, which of the following is a key characteristic to look for to ensure it meets BICSI recommendations?

A. A petroleum-based, highly viscous compound

B. A water-based, non-staining, non-toxic lubricant compatible with cable jackets

C. An adhesive-based formula to prevent cable movement

D. A powdered graphite to minimize friction

ANSWER: B

Explanation:

A water-based, non-staining, non-toxic lubricant compatible with cable jackets is the appropriate characteristic for lubricant used when pulling communications cable through conduit. The lubricant must reduce pulling friction without chemically attacking, softening, staining, or otherwise degrading the cable jacket or other pathway materials. Water-based pulling compounds are commonly specified because they are generally easier to clean up, have low toxicity, and are formulated for compatibility with common communications-cable jacket materials. Compatibility is especially important because cable jackets may be made from materials such as PVC, polyethylene, or low-smoke zero-halogen compounds, each of which can be adversely affected by an unsuitable chemical product. A non-staining formulation also helps preserve the appearance of finished spaces and avoids residue on cable, conduit ends, pull boxes, and installer equipment. Before use, the installer should confirm the lubricant manufacturer's instructions, safety data information, temperature limitations, and explicit compatibility with the cable manufacturer's jacket material. This supports the BICSI installation objective of protecting cabling components throughout the pull while maintaining safe, clean work practices. BICSI's cabling-installation resources are available at https://www.bicsi.org/standards/bicsi-standards, and cable-pulling product selection guidance can be found from recognized manufacturers such as https://www.3m.com/3M/en_US/p/d/b00008013/.

QUESTION NO: 2

For a telecommunications grounding and bonding system, which bonding conductor is typically responsible for ensuring that all metallic pathways and equipment within a building's telecommunications spaces are at the same ground potential?

A. Telecommunications Bonding Backbone (TBB)

B. Telecommunications Main Grounding Busbar (TMGB)

C. Equipment Bonding Jumper (EBJ)

D. Grounding Equalizer (GE)

ANSWER: A

Explanation:

The Telecommunications Bonding Backbone (TBB) is the building-level bonding conductor used to maintain an equipotential telecommunications bonding system among telecommunications spaces. It extends from the Telecommunications Main Grounding Busbar to telecommunications grounding busbars serving individual spaces, establishing a deliberate, low-impedance bonding path throughout the building's telecommunications infrastructure. By interconnecting these busbars, the TBB supports a common reference potential for the metallic pathways, racks, cabinets, cable-support systems, and equipment that are bonded in each telecommunications space. This equipotential bonding approach reduces voltage differences that could otherwise occur during faults, lightning-related events, or electrical disturbances, improving personnel safety and helping protect connected telecommunications equipment. The conductor's role is therefore not merely to provide a path to earth; it is to create and preserve bonding continuity between the building's telecommunications bonding points. This terminology and architecture are consistent with the telecommunications bonding infrastructure addressed by ANSI/TIA-607 and BICSI's telecommunications-distribution-methods guidance. See the Telecommunications Industry Association standards overview and BICSI Standards for authoritative standards and publications information.

QUESTION NO: 3

A third 90-degree bend may be permitted in a conduit run if the run does NOT exceed ______?

A. 5 m (16.5')

B. 10 m (33')

C. 15 m (50')

D. 30 m (100')

ANSWER: B

Explanation:

10 m (33') is correct. BICSI installation guidance generally limits conduit runs between pull points to the equivalent of two 90-degree bends so that cable can be installed without excessive pulling tension, sidewall pressure, or risk of damage. A limited exception permits a third 90-degree bend when the conduit segment is very short: no more than 10 m (33 ft). Keeping this three-bend segment short helps control the friction imposed by each change in direction and preserves a practical pulling path for balanced twisted-pair copper cable. The measurement applies to the conduit run between accessible pull points, such as pull boxes, handholes, cabinets, or other approved access locations. Installers should plan pull-point locations before conduit is installed, confirm that conduit is properly reamed and fitted with bushings, and retain an appropriate pull string so the pathway remains usable for the intended cabling work. This rule is a pathway-design and installation practice intended to support reliable cable installation, not merely a conduit-fill calculation. BICSI's standards resources provide the framework for telecommunications pathway and installation practices; applicable electrical-code requirements must also be followed where they govern the installation. See BICSI Standards and NFPA 70, National Electrical Code.

QUESTION NO: 4

A cable pull through an occupied conduit requires lubricant. Which selection criterion is MOST important before applying the lubricant?

A. Compatibility with the cable jacket, pathway, and installation environment

B. The ability to dry immediately after the cable is installed

C. The lowest available purchase price

D. The darkest color for easier visual identification

ANSWER: A

Explanation:

The lubricant must be compatible with the cable jacket, the pathway, and the installation environment. An incompatible lubricant can damage or degrade cable-jacket materials, leave unacceptable residue, or create a condition unsuitable for the pathway. The installer must also follow the cable manufacturer's instructions and use the lubricant as directed. Selecting lubricant solely because it is inexpensive, highly viscous, or available on site does not establish compatibility.

QUESTION NO: 5

Which of the following describes a situation where a BICSI Installer 2 may have to calculate a cable's derating factor?

A. When installing cables in plenum-rated air-handling spaces

B. When running cables in environments below -20°C (-4°F)

C. When bundling large numbers of cables together, impacting heat dissipation

D. When running cable vertically without any horizontal transitions

ANSWER: C

Explanation:

When bundling large numbers of cables together, impacting heat dissipation is correct because conductor bundles can retain heat generated by current flow. This is particularly important for balanced twisted-pair cabling that supports remote powering applications, where multiple energized pairs can raise the temperature within a tightly packed bundle. As bundle size, current level, ambient temperature, or pathway fill increases, the ability of individual cables to shed heat decreases. A derating calculation determines whether the installation conditions require a reduction in allowable current or a limitation on bundle size so that conductor and cable temperatures remain within their applicable ratings.

An Installer 2 should recognize this condition during pathway planning and installation, especially where cables are closely grouped for extended distances, such as in trays, sleeves, and cable baskets. Proper bundling practices, pathway selection, and spacing help maintain thermal performance and support reliable operation of remote-powered devices. BICSI installation practices address the relationship between cable installation conditions and performance requirements; the National Electrical Code also contains ampacity-adjustment principles for conductors installed together. See BICSI Standards and NFPA 70, National Electrical Code.

QUESTION NO: 6

A shielded balanced twisted-pair link passes transmission testing, but the tester reports shield-continuity failure. The cable shield was trimmed back at one termination and does not contact the jack. What should the installer do?

A. Re-terminate the cable so the shield is bonded through compatible connecting hardware

B. Leave the shield disconnected because transmission testing passed

C. Connect the drain wire to the nearest suspended-ceiling support wire

D. Remove the shield from the opposite end to balance the link

ANSWER: A

Explanation:

The installer should re-terminate the cable using shield-compatible connecting hardware and restore the shield connection in accordance with the manufacturer’s instructions. A shielded cabling system requires continuity through the cable, connecting hardware, patch-panel assembly, and bonding infrastructure. Passing balanced transmission parameters does not prove that the shield is continuous or correctly bonded. Leaving the shield unconnected defeats the intended shielding path, while connecting a drain wire to an unrelated metallic object would not provide proper bonding.

QUESTION NO: 7

Which of the following steps should be performed first when an installer is pulling optical fiber cable?

A. Install and secure innerduct

B. Ensure the cable has been tested and accepted

C. Label cables

D. Attach pull rope

ANSWER: A

Explanation:

Install and secure innerduct is the first step because the innerduct establishes the protected, continuous raceway that will contain and guide the optical fiber cable during installation. Before a pull begins, the installer must ensure that the pathway is complete, appropriately supported, free of obstructions, and secured so it will not shift, sag, or become damaged under pulling forces. Properly installed innerduct also provides separation from other cabling, reduces friction and exposure to pathway hazards, and helps preserve the cable's minimum bend radius throughout the route. This preparation is especially important for optical fiber because excessive tension, crushing, kinking, or sharp bends can cause damage that may not be visible externally but can impair optical performance. Once the innerduct is installed and secured, the installer can prepare the pulling line and cable-pulling hardware and conduct the pull using manufacturer-specified tension and bend-radius limits. This sequence reflects structured-cabling installation practice: prepare and verify the pathway first, then install the cable within that protected pathway. BICSI standards resources are available at BICSI Standards, and practical fiber-installation guidance is provided by the Fiber Optic Association.

QUESTION NO: 8

When pulling backbone cable in a vertical shaft, which of the following safety measures is MOST important to prevent cable stress and potential damage?

A. Using guide pulleys every 2 m (6 ft) of the pathway

B. Ensuring the fill ratio is below 70%

C. Securing cables at intermediate support points to reduce tension buildup

D. Pulling from the top floor downward to reduce friction

ANSWER: C

Explanation:

Securing cables at intermediate support points to reduce tension buildup is the most important measure because a vertical cable run imposes a cumulative gravity load on the cable and its components. Without properly engineered intermediate supports, the weight of cable below a given point can create excessive tensile loading, potentially exceeding the manufacturer's allowable pulling tension or long-term support rating. This can deform cable geometry, damage conductors or optical elements, and compromise transmission performance or reliability. Proper vertical-riser installation therefore uses listed support hardware and distributes the cable's weight at appropriate intervals, following the cable manufacturer's instructions and the pathway/support-system design. The cable should be installed without sharp bends, crushing, or excessive tension, and supports must be suitable for the cable type and environment. BICSI installation practices emphasize maintaining manufacturer limits and providing suitable support for cabling pathways and spaces; see BICSI Standards. The National Electrical Code also addresses securing and supporting communications cables in Article 800; the current code resources are available from NFPA 70 (National Electrical Code).

QUESTION NO: 9

A technician certifies a newly installed horizontal link using channel adapters and a channel test limit. The project specification requires Permanent Link certification. What should the technician do before accepting the result?

A. Retest using permanent-link adapters and the applicable permanent-link limit

B. Accept the channel result because it includes more cabling components

C. Remove the work-area outlet and test the horizontal cable directly

D. Convert the channel result to a permanent-link result by subtracting cord length

ANSWER: A

Explanation:

The technician should retest using the correct permanent-link adapters and the applicable permanent-link test limit. A channel test includes the permanent link plus equipment cords and work-area cords, whereas a permanent-link test evaluates only the fixed cabling and connecting hardware between the horizontal cross-connect and the telecommunications outlet. The test configuration, adapters, and limit must match the deliverable required by the project. A passing channel result does not substitute for a required permanent-link certification record.

QUESTION NO: 10

A Category 6A link intended to support remote powering passes wire-map, length, insertion-loss, and crosstalk testing. The field tester reports excessive dc resistance unbalance. Which installation condition is MOST likely to be responsible?

A. An excessive horizontal cable length

B. A work-area outlet mounted too close to the floor

C. A cable bundle supported at 1.5 m (5 ft) intervals

D. An uneven or poor conductor termination

ANSWER: D

Explanation:

An uneven or poor conductor termination is the most likely cause. DC resistance unbalance occurs when conductors intended to carry common-mode current do not have closely matched resistance. A partially seated conductor, damaged IDC contact, poor connector contact, or conductor damage can create this imbalance. Wire-map testing may still pass because conductor continuity and pin assignments are correct, but remote powering can be affected by unequal current sharing and increased heating. The suspect connections should be inspected, re-terminated as necessary, and the link retested.

QUESTION NO: 11

What grade of plywood is recommended for use with ICT systems?

A. A/C

B. A/D

C. C/D

D. B/C

ANSWER: A

Explanation:

A/C plywood is recommended for ICT-system applications, particularly where plywood is installed as a telecommunications backboard for mounting equipment, termination hardware, cable support components, or grounding-related hardware. The A-grade face provides a smooth, sanded, relatively defect-free working surface. This allows equipment to be mounted securely and neatly, reduces the likelihood of splinters or surface voids interfering with hardware installation, and supports clear labeling and orderly workmanship. The C-grade reverse face is acceptable because it is normally placed against the wall and is not intended to be the finished mounting surface. In practice, the panel must also be appropriately sized, securely fastened to the building structure, and selected or treated to meet applicable fire, building, and authority-having-jurisdiction requirements. Where a fire-retardant-treated panel is required, the treatment and its listing must be suitable for the installation environment. BICSI installation guidance emphasizes using recognized telecommunications infrastructure practices and coordinating materials with applicable codes and project requirements. See BICSI's standards and publications resources at BICSI Standards and the National Electrical Code overview from NFPA at NFPA 70.

QUESTION NO: 12

If a conduit run between two pull boxes has two 90-degree bends and measures 23 m (75 ft) total in length, what is the BEST way to comply with BICSI recommendations if you need to add a third 90-degree bend?

A. Lubricate the conduit heavily and pull the cable in one continuous run

B. Replace the entire run with larger conduit

C. Add an appropriately placed pull box or intermediate point

D. Use a flexible metallic conduit for the final bend

ANSWER: C

Explanation:

Add an appropriately placed pull box or intermediate point. BICSI pathway guidance is intended to keep cable-pulling paths practical and to limit pulling difficulty, cable tension, and the risk of damaging cable or its insulation. A conduit section that is already 23 m (75 ft) long and includes two 90-degree bends is at the commonly used maximum pathway length for a run with two bends. Adding another 90-degree bend increases the route's pulling resistance and makes it more difficult to maintain installation limits for pulling tension and bend radius. Installing an accessible pull box or other suitable intermediate pulling point divides the pathway into shorter, more manageable sections. This allows installers to pull cable in stages, reduces friction at bends, and provides an appropriate point for accessing the cable during installation or future work. The pull box should be located and sized so cable can be pulled without violating minimum bend-radius requirements and so it remains accessible after installation. This approach follows the fundamental BICSI practice of planning pathways to support safe, reliable cable installation rather than attempting to overcome an excessively difficult pull through lubrication or other means. See BICSI's standards and publications information and the National Electrical Code conduit-bend requirement in NFPA 70.