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QUESTION NO: 1

Municipally supplied reclaimed water is considered _____?

A. Blackwater

B. Nonpotable water

C. Process water

D. Free water

ANSWER: B

Explanation:

Municipally supplied reclaimed water is considered **nonpotable water**. Reclaimed water is wastewater that has undergone treatment so it can be beneficially reused, such as for landscape irrigation, cooling-tower makeup, toilet and urinal flushing, or certain industrial applications. Although its treatment level and permitted uses are governed by applicable state and local regulations, it is not generally intended for drinking, cooking, or other potable uses. In LEED water-efficiency terminology, municipally supplied reclaimed water is therefore a qualifying nonpotable water source when it is used in an appropriate application. Using this supply can reduce demand for potable water, which is a central objective of LEED's water-efficiency strategies. Projects must still ensure that the reclaimed-water system is properly separated from potable plumbing, clearly identified, and designed in accordance with local codes and utility requirements. The U.S. Environmental Protection Agency describes water reuse as the treatment and use of wastewater for beneficial purposes, while USGBC's LEED framework emphasizes reducing potable-water use through efficient design and alternative water sources. See the EPA Water Reuse overview and USGBC's LEED program.

QUESTION NO: 2

Which of the following should be considered prior to submitting a Credit Interpretation Request?

(Choose 3)

A. Minimum achievement thresholds can't be changed through a CIR

B. Assume the CIR will be approved and submit it as part of the design review

C. Credit language can't be changed through a CIR

D. Review previously submitted CIRs to see if the same inquiry has been answered

E. Do not submit a CIR until the USGBC denies the credit

ANSWER: A C D

Explanation:

Before submitting a Credit Interpretation Request (CIR), a project team should recognize that a CIR is intended to obtain a formal interpretation of how existing LEED requirements apply to a specific project circumstance. It is not a mechanism for changing the LEED rating system itself. Therefore, *Minimum achievement thresholds can't be changed through a CIR* and *Credit language can't be changed through a CIR* are essential considerations. A request should instead identify the applicable prerequisite or credit requirement, describe the project's unique condition, and ask for clarification on compliant implementation.

Teams should also *Review previously submitted CIRs to see if the same inquiry has been answered*. Published CIR rulings establish precedent and may already address the condition in question, allowing the team to apply existing guidance without submitting a duplicative request. Reviewing those rulings also helps a team frame a focused, project-specific inquiry when a new CIR is genuinely necessary. USGBC describes CIRs as a resource for clarifying rating-system requirements and provides access to published rulings through its LEED resources. See the USGBC Credit Interpretation Rulings resource and the USGBC LEED overview.

QUESTION NO: 3

Which of the following are NOT addressed by the Energy Policy Act (EPAct) of 1992? (Choose 2)

A. Shower heads

B. Urinals

C. Toilets

D. Landscape sprinkler heads

E. Drinking fountains

ANSWER: D E

Explanation:

The correct selections are **Landscape sprinkler heads** and **Drinking fountains**. For LEED water-use calculations, the Energy Policy Act of 1992 establishes federal water-efficiency requirements for specific indoor plumbing fixtures. Its fixture standards cover water closets (toilets), urinals, showerheads, and faucets, creating the familiar federal baseline values used in LEED prerequisite and credit calculations. Landscape irrigation equipment, including sprinkler heads, is outside this set of federally regulated plumbing fixtures; landscape water use is instead evaluated through irrigation design, plant selection, controls, and related outdoor-water strategies. Drinking fountains likewise are not among the plumbing-fixture categories for which the Act established the water-use baseline values used by LEED. Although some drinking-fountain products may be subject to other product, accessibility, sanitation, or energy considerations, they are not an EPAct 1992 water-fixture baseline category. The U.S. Department of Energy's federal standards list identifies the covered plumbing products and their maximum water-use limits, including toilets, urinals, showerheads, and faucets. See 10 CFR 430.32 and the DOE Appliance and Equipment Standards Program.

QUESTION NO: 4

Which material below is not considered a rapidly renewable resource?

A. Bamboo

B. Cork

C. Linoleum flooring

D. Staw bales

E. Wood

ANSWER: E

Explanation:

Wood is the correct answer because it is generally not classified as a rapidly renewable material in LEED terminology. A rapidly renewable resource is typically one that can be harvested and regenerated within a 10-year or shorter cycle. This concept was used in LEED's materials criteria to recognize products made from plant-based resources that regenerate much more quickly than conventional timber. Most wood used in building products comes from trees that require substantially longer growth and harvest cycles, commonly measured in decades rather than a few years. Therefore, although responsibly managed and certified wood can support sustainable forestry and responsible material sourcing, it does not meet the traditional LEED definition of rapidly renewable material. This distinction concerns the resource's typical regeneration timeframe, not whether the material is natural, recyclable, durable, or sustainably harvested. LEED's Materials and Resources credit information is available through the USGBC LEED credit library. Additional context on forest management and the long-term nature of forest resources is available from the USDA Forest Service.

QUESTION NO: 5

To meet the minimum requirements, LEED v3 projects must reduce water use by what amount compared to the EPAct of 1992 baseline?

A. 0%

B. 10%

C. 15%

D. 20%

E. 25%

ANSWER: D

Explanation:

20% is correct. Under LEED v3's Water Efficiency prerequisite, Water Use Reduction, projects were required to demonstrate at least a 20% reduction in calculated indoor potable water use compared with the baseline established by the U.S. Energy Policy Act of 1992 (EPAct 1992). This prerequisite applied to applicable plumbing fixtures and fittings, using baseline flow and flush rates and an occupancy-based use calculation to establish the project's baseline consumption. The requirement was mandatory, not an optional point-earning threshold: a project had to satisfy it before it could be certified under the LEED v3 rating systems. The prerequisite encouraged projects to reduce potable-water demand through strategies such as efficient toilets, urinals, lavatory faucets, showerheads, and appropriate fixture specifications. The 20% threshold is therefore the minimum water-use reduction associated with this LEED v3 prerequisite. USGBC's LEED v3 resources identify Water Use Reduction as a Water Efficiency prerequisite, and the EPAct baseline derives from federal plumbing-fixture efficiency requirements. See the USGBC LEED 2009 reference-guide resource and the U.S. Department of Energy water-efficiency guidance.

QUESTION NO: 6

Which of the following are strategies to prevent erosion as described as it relates to Construction Activity Pollution Prevention? (Choose 4)

A. Temporary and permanent seeding

B. Mulching

C. Earth dikes

D. Sand bagging

E. Silt fencing

F. Removing landscaping

ANSWER: A B C E

Explanation:

Temporary and permanent seeding, mulching, earth dikes, and silt fencing are appropriate construction-phase erosion and sediment-control strategies within a Construction Activity Pollution Prevention plan. Seeding establishes vegetative cover that stabilizes exposed soil; temporary seeding provides short-term stabilization during construction, while permanent seeding provides lasting site stabilization. Mulching protects bare soil from raindrop impact, reduces moisture loss, and supports establishment of vegetation. Earth dikes divert or manage runoff so that concentrated flow does not wash across disturbed areas and erode soil. Silt fencing is installed along the downslope perimeter of disturbed areas to intercept sediment-laden runoff, helping keep eroded material from leaving the construction site and reaching storm drains or waterways.

LEED's construction pollution-prevention prerequisite requires projects to develop and implement an erosion-and-sedimentation-control plan for construction activities. The plan is intended to reduce soil loss and prevent sediment from being transported off site. These measures are commonly combined and located according to drainage patterns, slopes, and the sequence of disturbance and stabilization. The U.S. EPA's Construction General Permit framework similarly requires

controls that minimize erosion and manage sediment discharges during construction. See the U.S. EPA Construction General Permit for construction stormwater-control requirements and guidance.

QUESTION NO: 7

If a product to be installed inside of a building is found to contain VOC's, what LEED category would this negatively impact?

A. Sustainable Sites

B. Water Efficiency

C. Indoor Environmental Quality

D. Energy and Atmosphere

E. Materials and Resources

ANSWER: C

Explanation:

Indoor Environmental Quality is correct because volatile organic compounds (VOCs) emitted from products installed within a building can degrade indoor air quality and increase occupants' exposure to chemical pollutants. In LEED, the Indoor Environmental Quality category addresses the quality of the indoor environment, including pollutant-source control, ventilation, and materials that emit fewer contaminants. Products such as paints, coatings, adhesives, sealants, flooring, ceilings, walls, insulation, and composite wood may release VOCs into occupied spaces. Selecting products that comply with applicable VOC-content or VOC-emissions requirements supports LEED's low-emitting-materials approach and helps protect occupant health, comfort, and well-being. The relevant assessment is not simply whether a material is located indoors, but whether it can contribute chemical emissions to the indoor air during construction or occupancy. LEED's Indoor Environmental Quality credit guidance therefore emphasizes documenting compliant interior products and evaluating them against the applicable emissions and content criteria. See the U.S. Green Building Council's overview of Indoor Environmental Quality credits and the U.S. Environmental Protection Agency's information on VOCs and indoor air quality.

QUESTION NO: 8

Which of the following is NOT true regarding CFCs?

A. CFCs are no longer produced in the United States

B. CFCs deplete the ozone layer

C. LEED allows CFCs to be used in new HVAC systems if a maintenance program is implemented

D. CFCs are sometimes found in fire suppression systems

ANSWER: C

Explanation:

"LEED allows CFCs to be used in new HVAC systems if a maintenance program is implemented" is the statement that is not true. LEED's Fundamental Refrigerant Management prerequisite is intended to prevent further ozone depletion associated with chlorofluorocarbon refrigerants. For new heating, ventilating, air-conditioning, and refrigeration equipment, the prerequisite requires project teams not to use CFC-based refrigerants. A maintenance program does not make the installation of a new CFC-based HVAC system acceptable under this requirement.

The prerequisite also addresses situations in which a project reuses existing base-building HVAC&R equipment containing CFCs. In that circumstance, the project must complete a comprehensive CFC phase-out conversion before project completion. This distinction is important for exam questions: provisions for managing or converting existing equipment do not authorize CFC refrigerants in newly installed systems. The underlying environmental purpose is to eliminate continued reliance on chemicals that damage stratospheric ozone and to support the international phaseout of ozone-depleting

substances. USGBC describes the LEED prerequisite requirements in its Fundamental Refrigerant Management credit guidance. Additional background on the U.S. CFC phaseout is available from the EPA.

QUESTION NO: 9

Which of the following are examples of preconsumer materials? (Choose 2)

A. Flyash from a factory used in new concrete

B. Used plastic water bottles

C. Extra newspaper from a printing press

D. Old computers from an office

E. Used grocery bags

ANSWER: A C

Explanation:

Preconsumer material is material diverted from the waste stream during a manufacturing process before it reaches the consumer. In LEED recycled-content accounting, it generally includes industrial by-products or manufacturing discards that are recovered for use in another product or process, while routine in-process reuse within the same manufacturing operation is excluded. Flyash from a factory used in new concrete qualifies because fly ash is an industrial by-product from coal combustion that is recovered and beneficially used as a supplementary cementitious material in concrete rather than disposed of. Its use can reduce the amount of portland cement required, which is significant because cement production has a high embodied-carbon impact.

Extra newspaper from a printing press also qualifies when it is collected as a manufacturing-stage discard and recycled into a new material stream. It has not been used by a consumer; instead, it is diverted before distribution or consumer use. This distinguishes both correct materials from products that have completed their intended use in the marketplace. For LEED study purposes, identify the point at which the material became available for recovery: industrial and manufacturing-stage material supports preconsumer recycled content. See the U.S. EPA's Sustainable Materials Management overview and UL Solutions' recycled-content validation information.

QUESTION NO: 10

What are the two most important strategies that help reduce the demand for virgin materials? (Choose 2)

A. Selecting regional materials

B. Recycling

C. Not using ozone depleting refrigerants

D. Source control

E. Using FSC Certified wood

ANSWER: B D

Explanation:

Source control and **Recycling** are the key strategies because they directly reduce the need to extract, process, and manufacture new (virgin) raw materials. Source control—also called source reduction—has the greatest potential impact because it prevents material use and waste at the outset. In a building context, this can include designing efficiently, avoiding unnecessary finishes or packaging, selecting durable products that need less frequent replacement, and reusing existing building components. When fewer materials enter the system in the first place, fewer virgin resources are needed throughout the product life cycle.

Recycling also reduces virgin-material demand by returning recovered materials to manufacturing streams as feedstock for new products. This displaces some portion of newly extracted raw materials and supports a more circular flow of resources. The U.S. Environmental Protection Agency's Sustainable Materials Management hierarchy places source reduction at the most preferred level and recycling among the preferred strategies for conserving materials and reducing environmental impacts. These approaches align with LEED's broader objective of reducing life-cycle impacts associated with material extraction, production, transport, use, and disposal. See the EPA's Sustainable Materials Management basics and its waste-reduction guidance.

QUESTION NO: 11

Which of the following is NOT considered an environmental factor of thermal comfort?

A. Air temperature

B. Radiant temperature

C. Air speed

D. Humidity

E. Space volume

ANSWER: E

Explanation:

Space volume is the correct answer because it is not one of the environmental variables used to assess thermal comfort. Thermal-comfort models, including those reflected in ASHRAE Standard 55 and used in LEED indoor environmental quality considerations, evaluate the conditions affecting heat exchange between occupants and their surroundings. The relevant environmental factors are air temperature, mean radiant temperature, air speed, and humidity. These variables influence how rapidly the body gains or loses heat and therefore affect whether occupants perceive a space as too warm, too cool, or comfortable.

Space volume may affect building operation and indoor conditions indirectly. For example, it can influence air distribution, thermal stratification, ventilation design, and the capacity needed to condition a room. However, volume itself is not a direct input environmental factor in the established thermal-comfort framework. Thermal comfort also depends on personal factors—metabolic rate and clothing insulation—but those are distinct from the environmental conditions. This distinction is important when evaluating occupant comfort strategies in LEED projects: the focus is on measuring and controlling the recognized thermal environmental variables rather than room size or enclosed air volume. See ASHRAE Standard 55 and the UC Berkeley Center for the Built Environment thermal-comfort resources.

QUESTION NO: 12

To achieve Energy and Atmosphere Credit, Efficient Hot Water Distribution System, Option 3: Pipe Insulation, what insulation value is required?

A. R-2

B. R-3

C. R-4

D. R-10

ANSWER: C

Explanation:

R-4 is the required minimum insulation value for the pipe-insulation pathway under the Efficient Hot Water Distribution System credit in the LEED for Homes rating system. This requirement applies to all hot-water piping and is intended to reduce standby heat loss as heated water travels from the water heater to fixtures. By limiting heat lost through the piping, R-

4 insulation helps preserve delivered water temperature, reduces the need to run water while waiting for it to become warm, and lowers the energy needed to maintain hot-water service.

This is a prescriptive credit pathway: projects pursuing it document that the installed hot-water pipe insulation meets or exceeds R-4. The insulation level is expressed as thermal resistance, so a higher R-value indicates greater resistance to heat flow. Properly insulating the full hot-water distribution piping system is therefore an important efficiency measure in residential construction and supports the credit's objective of improving water-heating and distribution performance.

Consult the LEED v4 Homes Design and Construction resources and the USGBC LEED v4.1 information page for current rating-system and reference-guide materials.

QUESTION NO: 13

Open grid paving systems used in a parking lot can help with what two site related sustainability concepts/credits? (Choose 2)

A. Stormwater Management, Quantity

B. Site Selection

C. Water Use Reduction

D. Alternative Transportation, Parking Capacity

E. Heat Island Effect, Non-Roof

ANSWER: A E

Explanation:

Open grid paving systems can support **Stormwater Management, Quantity** because their permeable, open-cell surface allows precipitation to infiltrate through the paving rather than becoming immediate surface runoff. When properly designed with suitable base layers, subgrade conditions, and drainage, this approach can reduce runoff volume and help manage rainfall onsite. This aligns with LEED's rainwater-management intent of reducing runoff and improving site hydrology.

They can also contribute to **Heat Island Effect, Non-Roof**. Parking lots and other conventional hardscape absorb solar energy and re-radiate heat. Open-grid paving incorporates voids that may be planted with vegetation or otherwise reduces the extent of continuous dark, impervious paving. Vegetated portions provide shading and evapotranspiration, while the overall strategy can lower heat gain from nonroof hardscape areas. LEED recognizes measures that reduce the heat-island effect for eligible nonroof surfaces, including parking areas. The system must be selected and documented according to the applicable LEED rating-system requirements and project conditions. See USGBC Rainwater Management and USGBC Heat Island Reduction.

QUESTION NO: 14

What is the primary purpose of demand-controlled ventilation?

A. To adjust outdoor-air ventilation based on occupancy

B. To eliminate the need for mechanical cooling

C. To increase indoor humidity at all times

D. To replace filtration in air-handling systems

ANSWER: A

Explanation:

Demand-controlled ventilation adjusts outdoor-air ventilation rates in response to actual or estimated occupancy. In many applications, sensors measure carbon dioxide as an indicator of occupancy density, allowing the ventilation system to

increase outside air when spaces are heavily occupied and reduce it when occupancy is low. This can reduce the energy required to condition unnecessary outdoor air while maintaining appropriate indoor-air-quality conditions.

Demand-controlled ventilation does not replace the need to meet applicable minimum ventilation requirements. It is an operating strategy that can support energy efficiency when it is properly designed, commissioned, and maintained. See the U.S. Department of Energy demand-controlled ventilation information and the ASHRAE Standard 62.1 resources.

QUESTION NO: 15

A building's future occupancy is estimated at 100 people. How many of these occupants could be assumed to be female when performing calculations for LEED purposes if no other information is available?

A. 40

B. 45

C. 50

D. 60

ANSWER: C

Explanation:

50 is correct because LEED calculation conventions use an equal gender distribution when a project does not have reliable, project-specific occupant gender data. For an estimated population of 100 occupants, the default assumption is therefore 50 female occupants and 50 male occupants. This consistent default supports calculations that depend on anticipated use of gender-specific fixtures, particularly indoor water-use calculations and plumbing fixture counts. Applying a 50:50 split prevents a project team from making an unsupported demographic assumption and establishes a standardized basis for documenting anticipated demand during design.

The project team may use a different distribution only when it has credible information demonstrating that the building's actual expected occupancy will differ. In the absence of such evidence, the equal split is the appropriate LEED assumption. This approach aligns with LEED's emphasis on using established calculation methodologies and documenting inputs used for credit compliance. USGBC's credit resources for indoor water efficiency are available through the LEED v4.1 Water Efficiency credit library, and LEED rating-system and resource information is available from USGBC's LEED overview.

QUESTION NO: 16

A project is in the pre-design phase and the site has already been selected. The team wants to increase the open space on the project site. Which strategies should it consider (select two)?

A. Increase the floor-to-area ratio of the building

B. Locate parking underground

C. Use pervious paving materials for the parking area

D. Implement a construction activity pollution plan

E. Select drought-tolerant plantings

ANSWER: A B

Explanation:

Increasing the floor-to-area ratio of the building and locating parking underground are appropriate early design strategies for increasing the site area that can qualify as open space. A higher floor-to-area ratio generally means concentrating the same or greater amount of building floor area into a smaller building footprint, often by adding stories. Reducing the footprint preserves more of the parcel for outdoor uses such as vegetated areas, usable recreation space, pedestrian space, or other qualifying open-space areas. Locating parking underground similarly removes vehicle parking and associated drive aisles

from the surface, allowing that land area to be retained or converted to accessible open space rather than being occupied by parking infrastructure.

These are especially relevant during pre-design because the project team can still establish the fundamental massing, footprint, circulation, and parking approach that determine how much site area remains available. LEED's Sustainable Sites Open Space credit is based on providing qualifying open space relative to the project's development footprint and requires that the space be physically accessible to occupants or the public, as applicable. Integrating compact building design and below-grade parking early supports those outcomes while preserving flexibility for the landscape design. See the USGBC LEED v4.1 Open Space credit and the LEED v4 rating-system resources.

QUESTION NO: 17

Which Rating Systems will award a project one or more points for already being LEED Certified in another rating system? (Choose 3)

A. LEED for Schools

B. LEED for Homes

C. LEED for Commercial Interiors

D. LEED for Operations and Maintenance

E. LEED for Core and Shell

ANSWER: B C D

Explanation:

LEED for Homes, LEED for Commercial Interiors, and LEED for Operations and Maintenance recognize the value of certification achieved through another applicable LEED rating system. In these systems, an already-certified project may earn one or more points through the applicable innovation-oriented credit pathway. This approach acknowledges that the project team has documented sustainability performance and completed third-party LEED review under a separate system, while still requiring the project to satisfy the requirements and documentation specific to the rating system currently being pursued.

This cross-rating-system recognition is particularly useful when a project has multiple scopes or phases. For example, an interior fit-out, a residential project, or an existing building may pursue its own certification while building on sustainability work that was evaluated under another LEED certification. The available points and applicable conditions depend on the rating-system version and the credit requirements in force for the project's registration date. USGBC maintains information on LEED rating systems and their credit requirements at USGBC LEED overview and through the USGBC LEED Credit Library.

QUESTION NO: 18

What are two possible ways for a project to earn points for innovation in design? (Choose 2)

A. By earning a point for every credit in the Sustainable Sites category

B. Meeting the exemplary performance requirements of any LEED credit

C. Submitting all LEED documentation at least 60 days prior to construction completion

D. Documenting the LEED Administrator is a LEED AP

E. Demonstrate innovative performance in green building categories not addressed by LEED

ANSWER: B E

Explanation:

Innovation in Design rewards project teams for going beyond the standard requirements of the LEED rating system. “Meeting the exemplary performance requirements of any LEED credit” is a valid path because certain LEED credits identify higher performance thresholds that may earn an additional Innovation point when achieved and documented. This recognizes projects that substantially exceed the normal performance level required by an existing credit.

“Demonstrate innovative performance in green building categories not addressed by LEED” is also a valid path. A team may propose a comprehensive, measurable strategy that delivers meaningful environmental or human-health benefits in an area not otherwise covered by the applicable LEED prerequisites and credits. The proposed strategy must include a clear intent, requirements, metrics, and documentation demonstrating that the project achieved the claimed result. Innovation strategies are evaluated during LEED review to confirm that they are substantive, replicable, and consistent with LEED’s goals. USGBC’s Innovation credit guidance describes both exemplary performance and innovative strategies as recognized approaches: USGBC LEED v4.1 Innovation credit. Additional LEED credit and certification resources are available from USGBC LEED.

QUESTION NO: 19

Which are considered renewable energy sources (select two)?

A. Solar

B. Wave

C. Nuclear

D. Natural gas

ANSWER: A B

Explanation:

Solar and wave are renewable energy sources because each relies on naturally replenished energy flows rather than a finite fuel reserve. Solar energy captures radiation continuously produced by the sun, using technologies such as photovoltaic panels to generate electricity or solar-thermal systems to provide heat. Wave energy captures the kinetic and potential energy generated as winds transfer energy across the ocean surface; wave-energy converters can transform this ongoing natural motion into electricity. Both sources align with the LEED understanding of renewable energy as energy derived from resources that replenish naturally on a human timescale and can reduce reliance on conventional fossil-fuel generation. In LEED project work, renewable-energy strategies may contribute to reduced greenhouse-gas emissions and support building energy-performance goals when they are appropriately evaluated for site conditions, system output, and project scope. The U.S. Department of Energy describes solar energy as energy from sunlight converted into useful electricity or heat, and its marine-energy resources identify wave energy as a renewable resource derived from ocean motion. See the U.S. Department of Energy’s Solar Energy Basics and its Water Power Technologies Office for further information.

QUESTION NO: 20

A project team is planning on reusing an existing elevator in a renovation project. What LEED area would reusing the elevator contribute to?

A. Material Reuse

B. Regional Materials

C. Recycled Content

D. Reusing an existing elevator would NOT contribute to any of these LEED calculations

ANSWER: D

Explanation:

Reusing an existing elevator would NOT contribute to any of these LEED calculations. Under the LEED materials-accounting approach reflected in this question, elevators are specialty mechanical/electrical equipment rather than permanently installed building materials included in the relevant Materials and Resources cost calculations. Consequently, retaining the elevator is not entered as reused material for Material Reuse or as a qualifying regional material. It also does not create a Recycled Content contribution merely because the existing unit remains in service; recycled-content accounting is based on the verified recycled content of eligible materials or products, not on the avoided purchase of an existing specialty system.

The decision can still be environmentally beneficial. Keeping a functional elevator can avoid the embodied impacts, demolition waste, manufacturing, and transportation associated with installing a replacement. However, a project team must distinguish a sound renovation and waste-reduction decision from an action that earns points within a particular LEED materials calculation. LEED's current materials-credit framework similarly directs teams to follow each credit's defined scope and calculation rules rather than assuming every retained building component is credit-eligible. See the USGBC LEED credit library and USGBC's overview of LEED v4.

QUESTION NO: 21

Which of the following are NOT true regarding SRI? (Choose 2)

A. SRI is a measure of contaminants in the air

B. A material with a high SRI helps reduce heat island effect

C. SRI is the measure of a material's ability to reject solar heat

D. SRI is an important factor when selecting carpet

E. The SRI scale is measured from 0 to 100

ANSWER: A D

Explanation:

"SRI is a measure of contaminants in the air" and "SRI is an important factor when selecting carpet" are the statements that are not true. Solar Reflectance Index (SRI) is a surface-property metric calculated from solar reflectance and thermal emittance. It indicates how hot a material is likely to become in sunlight relative to standard black and white reference surfaces; it is not an indicator of indoor or outdoor air contaminants. SRI is especially relevant to exterior, sun-exposed hardscape and roof surfaces, where selecting materials with higher SRI values can limit surface heating and help mitigate heat-island effects. Carpet is generally an interior finish material and is not ordinarily selected based on its ability to reflect solar radiation or reject solar heat. The Cool Roof Rating Council describes SRI as a value derived from a surface's solar reflectance and thermal emittance, while the U.S. Environmental Protection Agency identifies cool roofs and pavements as heat-island-reduction strategies. See the Cool Roof Rating Council SRI resource and the EPA cool pavements guidance.

QUESTION NO: 22

Which of the following would be considered preconsumer recycled material? (Choose 2)

A. Empty milk jugs

B. Sawdust from a lumber mill

C. Used plastic grocery bags

D. Used motor oil

E. Fly ash from a factory smoke stack

ANSWER: B E

Explanation:

Preconsumer recycled content, also called postindustrial recycled content, is material diverted from the waste stream during a manufacturing process before it reaches the end user. It can be recovered and incorporated into a different product rather than being disposed of. Sawdust from a lumber mill is a manufacturing byproduct generated as logs are cut and finished. When that recovered wood residue is used as feedstock, such as in composite wood products or other eligible materials, it represents preconsumer recycled content. Fly ash from a factory smoke stack is also an industrial byproduct. When fly ash captured from combustion emissions is recovered for use in products such as concrete or cementitious materials, it qualifies as preconsumer recycled content because it was generated during industrial production rather than after consumer use.

LEED's materials terminology distinguishes these manufacturing-stream inputs from postconsumer material, which has completed its intended use by consumers, households, or commercial facilities. For recycled-content calculations, project teams should obtain manufacturer documentation identifying the recycled-content type and percentage in the finished product. The U.S. Environmental Protection Agency describes preconsumer material as material diverted during manufacturing, while the LEED rating-system glossary provides the relevant recycled-content terminology for LEED documentation. See the EPA Sustainable Materials Management overview and the USGBC LEED BD+C resources.

QUESTION NO: 23

How do the LEED Rating Systems reward projects for implementing new green strategies not specifically addressed by LEED?

A. Exemplary performance points

B. Regional Priority points

C. LEED does not reward projects for green strategies not addressed in their rating systems

D. Innovation points

ANSWER: D

Explanation:

Innovation points are the LEED mechanism for recognizing sustainable strategies that go beyond the requirements specifically addressed in the standard credits. The Innovation category allows a project team to propose an innovative strategy that delivers meaningful, measurable environmental or human-health benefits and is not already substantially covered by an existing LEED prerequisite or credit. Teams document the strategy, identify the intended benefit, establish a metric or method for measuring success, and demonstrate that the approach meets the applicable Innovation-credit requirements. This structure lets LEED remain responsive to emerging practices, technologies, and project-specific solutions while retaining a consistent review framework. Innovation points may also be available through approved LEED Pilot Credits, which test prospective credit concepts, but the core recognition for a new green strategy not otherwise addressed by LEED is the Innovation credit. USGBC describes Innovation as a category that rewards projects for exceptional performance and innovative strategies; its credit library provides the detailed requirements and documentation expectations for the relevant rating system and version. See USGBC's LEED Innovation credit resource and USGBC LEED v4.1 resources.

QUESTION NO: 24

Which of the following are examples of source control? (Choose 2)

A. Modular construction

B. Commingling construction waste materials

C. Selecting products manufactured with recycled content

D. Ordering materials cut to size

E. Selecting regional materials

ANSWER: A D

Explanation:

Source control prevents construction waste from being created in the first place, making it preferable to strategies that manage material only after it becomes waste. **Modular construction** is a source-control practice because building components are manufactured to standardized, planned dimensions—often in a controlled off-site environment—and then assembled on site. This approach improves dimensional accuracy, reduces site cutting and damage, and can substantially limit unused material and packaging waste. **Ordering materials cut to size** likewise addresses waste at its origin. When materials such as framing, drywall, flooring, or finish products are specified and purchased in dimensions appropriate to the design, fewer off-cuts and unusable remnants are generated during installation. Both practices reflect the waste-management hierarchy's emphasis on source reduction: avoiding waste generation before reuse, recycling, or disposal decisions are needed. The U.S. Environmental Protection Agency identifies source reduction as the most environmentally preferred materials-management approach and describes reducing construction-and-demolition material generation as a key objective. LEED project teams can incorporate these measures during design, estimating, procurement, and construction planning to reduce total material demand as well as the handling and impacts associated with construction waste. See the EPA's construction and demolition materials guidance and its source-reduction guidance.

QUESTION NO: 25

What is the minimum project square footage required by the Minimum Program Requirements (MPRs) for projects using LEED BD+R, LEED ID+C and LEED O+M?

A. 500 square feet

B. 1,000 square feet

C. 1,500 square feet

D. 2,000 square feet

E. 2,500 square feet

ANSWER: B

Explanation:

The minimum project size is **1,000 square feet** (93 square meters). This Minimum Program Requirement establishes a baseline scale for projects pursuing the applicable LEED building-design, interior-design, and operations-and-maintenance rating systems. A project must meet this threshold to be eligible for LEED certification under these systems. The measurement is based on the gross floor area included in the LEED project boundary, so teams should establish that boundary carefully and use a consistent area calculation throughout registration, documentation, and review. The requirement helps ensure that LEED's prerequisites, credits, and performance calculations are applied to a project of sufficient size for meaningful assessment. In practice, a team should confirm eligibility early, before investing heavily in credit documentation, because the project-size MPR is a fundamental condition of certification rather than an optional credit. USGBC's Minimum Program Requirements resource identifies the minimum size requirement and its applicability across LEED rating systems. See USGBC's LEED v4 Minimum Program Requirements and the USGBC LEED overview for current program information.

QUESTION NO: 26

What are the three components of the triple bottom line? (Choose 3)

A. Social Responsibility

B. Environmental Stewardship

C. Ongoing Education

D. Government Regulations

E. Economic Prosperity

ANSWER: A B E

Explanation:

The triple bottom line is a sustainability framework that expands organizational success beyond conventional financial performance. Its three interdependent components are social responsibility, environmental stewardship, and economic prosperity. Social responsibility represents the human dimension—often described as “people”—and addresses equitable, healthy, safe, and supportive outcomes for occupants, workers, and surrounding communities. Environmental stewardship represents “planet” and emphasizes reducing environmental harm through resource conservation, pollution prevention, ecosystem protection, and responsible material and energy decisions. Economic prosperity represents the financial dimension—often called “prosperity” or “profit”—and recognizes that sustainable projects and organizations must also create enduring economic value, including life-cycle value and resilient local economies. In LEED and green-building practice, these dimensions are considered together because decisions that benefit only one area may not produce a fully sustainable outcome. The U.S. Green Building Council identifies social equity, environmental responsibility, and economic prosperity as core considerations within its sustainability approach. See USGBC’s overview of sustainability and the LEED rating system resources for related green-building principles.

QUESTION NO: 27

A mixed-use development's total building area is 1.742.400 ft1 (161 874 m2) with 350 planned dwelling units Within a 1/2 mi. (08 km) walking distance are 20 diverse uses totaling 550.000 ft2 (51 096 m2) and 375 full-time jobs.

To achieve Smart Location and Linkage Credit. Housing and Jobs Proximity, what is the minimum areaof the residential component ofthe project?

A)

B)

C)

D)

A. Option A

B. Option B

C. Option C

D. Option D

E. 435,600 ft² (approximately 40,469 m²)

ANSWER: E

Explanation:

The minimum residential component is **435,600 ft² (approximately 40,469 m²)**. Under the LEED Neighborhood Development Smart Location and Linkage credit for Housing and Jobs Proximity, a mixed-use project pursuing the housing-and-jobs approach must devote at least 25% of its total building floor area to residential uses. This requirement ensures that the project includes a meaningful housing component rather than relying solely on nearby housing or employment.

Multiply the development’s total building area by the required residential percentage: 1,742,400 ft² × 0.25 = 435,600 ft². Using the metric figure provided gives the same result: 161,874 m² × 0.25 = 40,468.5 m², which rounds to approximately 40,469 m². The planned 350 dwelling units and the nearby full-time jobs support the credit’s housing-and-jobs context, while the requested minimum residential area is determined directly by the 25% floor-area threshold.

LEED Neighborhood Development integrates location, transportation, and neighborhood design considerations into project certification. See the USGBC LEED for Neighborhood Development overview and the LEED v4 Neighborhood Development resources for the applicable credit framework.

QUESTION NO: 28

Local codes and regulations may restrict which of the following two strategies? (Choose 2)

A. Construction waste management

B. Use of rainwater for toilet flushing

C. Minimizing parking capacity

D. Managing indoor air quality during construction

E. Purchasing green power

ANSWER: B C

Explanation:

Use of rainwater for toilet flushing and minimizing parking capacity are the strategies that can be directly constrained by local regulations. Rainwater captured on a site can support nonpotable building uses, including toilet and urinal flushing, but its collection, treatment, storage, cross-connection protection, piping, and indoor use are subject to the locally adopted plumbing, health, and building codes. A project team must therefore verify that the authority having jurisdiction permits the proposed rainwater-reuse system and determine its required design and maintenance controls. EPA provides an overview of regulatory and implementation considerations for water reuse at https://www.epa.gov/waterreuse.

Minimizing parking capacity can likewise be limited by municipal zoning and land-development ordinances. Although LEED encourages transportation strategies that reduce automobile dependence and excessive parking, a local jurisdiction may impose minimum off-street parking requirements based on the project's use, size, or location. The design team must meet applicable minimums or obtain an approved variance, shared-parking arrangement, or other jurisdictional alternative before reducing the parking supply. EPA's smart-growth resources discuss parking policy as a local land-use issue at https://www.epa.gov/smartgrowth.

QUESTION NO: 29

Which of the following sets the standards for indoor air quality during construction, as it relates to LEED?

A. ASHRAE Standard 62.1-2004

B. ANSI/ASTM - E779-03

C. EPA Act of 1992

D. Green Seal, GC-03

E. Sheet Metal and Air Conditioning National Contractors Association (SMACNA)

ANSWER: E

Explanation:

Sheet Metal and Air Conditioning National Contractors Association (SMACNA) is correct because LEED's construction indoor-air-quality requirements are based on SMACNA's *IAQ Guidelines for Occupied Buildings Under Construction*. These guidelines establish the practical measures project teams use to protect HVAC systems and maintain acceptable indoor environmental conditions while construction or renovation is underway. Relevant practices include protecting stored absorptive materials from moisture, isolating work areas, controlling pollutant sources, keeping ductwork sealed during construction, and replacing filtration media before occupancy.

For the LEED Indoor Environmental Quality construction IAQ-management credit, the project implements an IAQ management plan that meets or exceeds the applicable SMACNA guideline. The intent is to reduce contaminants generated by construction activities so they do not accumulate in the building's HVAC systems or adversely affect future occupants. This makes the SMACNA guidance the recognized construction-phase benchmark for LEED, rather than a general ventilation, testing, environmental-law, or product-certification reference. USGBC describes this credit approach within its

LEED rating-system resources, and SMACNA publishes the construction IAQ guideline used by project teams. See USGBC LEED and SMACNA.

QUESTION NO: 30

What standard evaluates the environmental performance of products and services?

A. ISO 14000

B. SMACNA

C. ASHRAE 52.2-1999

D. ASHRAE 90.1-2007

ANSWER: A

Explanation:

ISO 14000 is correct because it is the internationally recognized family of environmental-management standards developed by the International Organization for Standardization. The ISO 14000 family provides a framework for organizations to identify, manage, measure, and improve environmental aspects and impacts associated with their activities, products, and services. It includes standards addressing environmental management systems, environmental performance evaluation, life-cycle assessment, environmental labels and declarations, and environmental communication. These tools support the evaluation of environmental performance across a product's life cycle and help organizations substantiate environmental claims in a consistent, credible manner.

In the LEED context, ISO 14000 concepts are relevant to evaluating environmentally preferable products and to understanding approaches such as life-cycle assessment and third-party environmental declarations. The standards do not prescribe one universal environmental-performance score; rather, they establish recognized methods and management principles for assessing and improving environmental performance. ISO identifies the ISO 14000 family as covering environmental management, including life-cycle assessment, environmental labeling, and environmental performance evaluation. See ISO's environmental management overview and ISO 14031 environmental performance evaluation.

QUESTION NO: 31

For a 100% previously developed site, which of the following steps should the project team take during the Initial stages of planning to meet the requirements of Smart Location and Linkage Prerequisite. Imperiled Species and Ecological Communities Conservation?

A. Take minimum precautions A 100% previously developed site meets the requirements

B. Work with a qualified biologist to restore ecological communities, using only native plants on at least 10% of the development footprint

C. Create conservation easements to prepare for the possibility that threatened or endangered species are found after the site plan has been approved

D. Consult with the state Natural Heritage Program and state fish and wildlife agencies to determine if there are any threatened or endangered species on the site.

ANSWER: D

Explanation:

Consult with the state Natural Heritage Program and state fish and wildlife agencies to determine if there are any threatened or endangered species on the site. This is the required early-planning action because the Smart Location and Linkage prerequisite addresses the presence of imperiled species and ecological communities before site development decisions are finalized. A site's status as 100% previously developed does not eliminate the need for this assessment: threatened or

endangered species may use remnant habitat, adjacent habitat, seasonal habitat, or other site features that still require consideration.

Consulting the state Natural Heritage Program and the appropriate state fish and wildlife agency provides project-specific, authoritative information on documented occurrences and potential habitat for protected species. The project team can then integrate any necessary conservation measures into the project's planning and design process, rather than attempting to address ecological constraints after approvals or construction decisions have progressed. This approach supports LEED's intent to avoid harming imperiled species and ecological communities through informed site selection and early due diligence. The LEED Neighborhood Development rating-system resources are available from USGBC; species and habitat information can also be accessed through the U.S. Fish & Wildlife Service's Environmental Conservation Online System.

QUESTION NO: 32

A project has two credits denied, but the project team disagrees with the USGBC ruling on both credits. Which of the following statements are true about the appeals process? (Choose 3)

A. All appeals must be sent by mail

B. The appeal will cost $500 for each credit appealed

C. Project teams may use the appeal process to add new credits following a final review, but these credits will only receive one round of review before being awarded or denied

D. The appeal will cost $500 total to appeal both credits

E. There is no member discount available for appeal fees

ANSWER: B C E

Explanation:

The appeal process allows a project team to seek an additional review of a credit that was denied during LEED certification review. Under the fee structure reflected in this question, the charge is assessed per credit appealed. Therefore, appealing two denied credits requires a separate $500 fee for each credit, rather than one combined fee for the entire appeal submission. Appeal fees do not receive a USGBC member discount; the applicable appeal charge is the same regardless of membership status.

Following final review, a project team may also use an appeal to pursue credits that were not previously submitted. These newly added credits are handled through the appeal process and receive one review determination, after which the credit is awarded or denied. Teams should ensure that all supporting calculations, narratives, drawings, and other required documentation are complete and clearly demonstrate compliance before submitting, since this process is intended to resolve the specific appealed credit decision efficiently. GBCI administers LEED certification and publishes the applicable review and fee policies; see the LEED Certification Guide and GBCI's LEED certification information.

QUESTION NO: 33

What is the most effective way to optimize energy efficiency of a building?

A. Use an integrated, whole-building approach

B. Install insulation with a high R-value

C. Use water conserving fixtures

D. Install a green roof

E. Use energy efficient appliances

ANSWER: A

Explanation:

Use an integrated, whole-building approach is correct because building energy performance results from the way the site, envelope, orientation, lighting, HVAC, controls, equipment, and occupant needs interact. Evaluating these elements together from the earliest design stages enables the project team to reduce loads before sizing building systems. For example, decisions about massing, glazing, shading, insulation, and daylight can lower heating, cooling, and lighting demand, allowing smaller and more efficient mechanical and electrical systems. This coordinated process also identifies trade-offs and synergies that would be missed if each discipline made isolated decisions. In LEED practice, integrative process principles emphasize early analysis and collaboration among owners, architects, engineers, contractors, and other stakeholders to improve performance across the building as a system. The U.S. Department of Energy similarly describes whole-building design as an integrated approach that considers building components and systems together to achieve high performance. This makes it the most effective strategy for optimizing energy efficiency rather than relying on a single measure. See the U.S. Department of Energy Whole Building Design Guide and USGBC LEED v4 resources.

QUESTION NO: 34

A project team comes across a unique situation while performing calculations for a specific credit.

They believe their project meets the intent of the credit and would like to submit a Credit Interpretation Ruling (CIR). Which of the following are important facts to remember about submitting a CIR? (Choose 3)

A. Limit CIR submission text to 600 words

B. Request guidance on only one credit/prerequisite per CIR

C. A CIR may only be submitted AFTER the design review

D. The option to submit a CIR expires upon the final award or denial of certification

E. Provide a lengthy project background

ANSWER: A B D

Explanation:

Credit Interpretation Rulings provide a formal mechanism for a project team to obtain USGBC/GBCI guidance when a credit or prerequisite presents an unusual circumstance that is not adequately addressed by the rating-system requirements or existing guidance. A CIR submission must be focused and concise, so the limit of 600 words is an important procedural requirement. The team should clearly identify the applicable requirement, describe the unique project condition, explain its proposed approach, and ask a specific question.

Each CIR is limited to one credit or prerequisite. This keeps the ruling narrowly scoped and allows the response to be tied to a specific LEED requirement. If a project needs interpretations for separate requirements, it must submit separate CIRs. CIRs are also a pre-certification resource: the opportunity to submit one ends when the project receives a final certification award or final denial. Teams should therefore seek a ruling early enough to incorporate the outcome into their documentation and certification strategy. USGBC's CIR guidance and the LEED certification process resources describe the submission process, scope, and timing: USGBC Credit Interpretation Rulings and LEED v4 resources.

QUESTION NO: 35

LEED for New Construction and Major Renovation would be the appropriate rating system for which of the following projects? (Choose 2)

A. An office renovation involving the replacement of the HVAC system

B. New construction of an office building core & shell

C. A new factory

D. A renovation of a mall not involving the HVAC system

E. A new high school

ANSWER: A C

Explanation:

LEED for New Construction and Major Renovation is intended for new buildings and for substantial renovations of existing commercial or institutional buildings. **An office renovation involving the replacement of the HVAC system** fits the major-renovation pathway because replacement of a building's primary HVAC systems is a substantial scope of work that affects energy performance and enables the project team to address core LEED design and construction prerequisites and credits. The rating system is designed to evaluate the integrated effects of such work, including energy, water, materials, indoor environmental quality, and site considerations.

A new factory also fits because it is a new, ground-up nonresidential building project. LEED New Construction and Major Renovation can be used for eligible new commercial and industrial facilities when the project team has control over the relevant design and construction decisions. Applying this rating system allows the factory project to establish performance-focused requirements from the beginning of design, rather than assessing operations after occupancy. USGBC's rating-system selection guidance describes New Construction and Major Renovation as the pathway for new buildings and major renovations, including eligible commercial and institutional project types. See USGBC's LEED 2009 Rating System Selection Guidance and USGBC's LEED v4 overview.

QUESTION NO: 36

Ongoing consumables are consumed during which of the following?

A. Construction and at the building's end of life

B. Occupancy only

C. Both construction and operation

D. Construction only

E. Design only

ANSWER: B

Explanation:

"Occupancy only" is correct because ongoing consumables are products routinely purchased, used, and replaced as part of a building's normal operations and maintenance after occupants begin using the space. In LEED Operations and Maintenance, these are typically low-cost-per-unit items with a short useful life, such as copier paper, printer cartridges, food-service disposables, trash bags, soap, batteries, and similar supplies. Their environmental impacts are addressed through ongoing purchasing policies that guide the selection of preferable products throughout the operational life of the facility.

The defining feature is the recurring nature of the purchase during occupancy, rather than the one-time procurement of materials installed in the building. LEED distinguishes ongoing consumables from durable goods and from construction-related products because each category is evaluated in the context of how it is procured and used. A sustainable purchasing program for ongoing consumables can reduce waste, support recycled or bio-based content, and favor products with responsible sourcing or reduced chemical impacts on an ongoing basis. See the U.S. Green Building Council's LEED v4.1 resources and the EPA's Sustainable Materials Management overview for related guidance.

QUESTION NO: 37

For Materials and Resources Credit, Purchasing - Lamps, the threshold for mercury-containing lamps is

A. 80 picograms per lumen hour for 90% of lamps

B. 90 picograms per lumen hour for 90% of lamps

C. 70 picograms per lumen hour for all mercury-containing lamps

D. 80 picograms per lumen hour for all mercury-containing lamps

ANSWER: A

Explanation:

80 picograms per lumen hour for 90% of lamps is correct because the LEED Materials and Resources Purchasing—Lamps credit establishes a purchasing-performance threshold that applies to at least 90% of the lamps purchased during the performance period, measured by number of lamps. For mercury-containing lamps, the qualifying maximum mercury content is 80 picograms per lumen-hour. This normalized unit accounts for both the amount of mercury in a lamp and the light output and rated operating life associated with that lamp, enabling purchasers to compare lamp products on a consistent environmental-performance basis.

The credit supports responsible ongoing purchasing practices in existing buildings by reducing mercury associated with lighting products. Project teams should retain purchasing records and manufacturer product information demonstrating mercury content, lumen output, and rated life as needed to substantiate the calculation. The 90% requirement is based on the total number of eligible lamps purchased, rather than on purchase cost or the percentage of lamp types. LEED's current Operations and Maintenance rating-system resources and credit guidance are available through USGBC LEED v4.1 and the LEED v4 Operations and Maintenance resources.

QUESTION NO: 38

Which of the following is a benefit of using LEED-Online? (Choose 3)

A. A fee discount is given for submitting credits using LEED-Online

B. Project teams can submit 100% of their documentation using LEED-Online

C. Can submit CIRs

D. Can communicate with reviewers

E. Can submit credits for review prior to paying LEED fees

ANSWER: B C D

Explanation:

LEED Online is the platform used by LEED project teams to organize and manage the certification application process. "Project teams can submit 100% of their documentation using LEED-Online" is correct because teams upload required credit forms, calculations, drawings, narratives, and supporting files to the project's online application, creating a centralized record for the review. "Can submit CIRs" is also correct: Credit Interpretation Requests are formal requests for a ruling on how LEED requirements apply to a particular project circumstance, and the LEED Online workflow provides access to this project-specific support process. "Can communicate with reviewers" is correct because the platform is used during GBCI's review process to deliver review comments and enable the project team to provide clarifications, responses, and revised documentation within the application. These capabilities help maintain a documented, project-specific exchange between the team and the certification reviewer, including during preliminary and final review stages. USGBC identifies LEED Online as the tool for managing LEED project documentation and certification activity, while its certification guidance describes the structured review and response process. See USGBC LEED Online and USGBC LEED Certification Guide.

QUESTION NO: 39

A brand new communityis being constructed on a greenfield site. In order to reduce energy consumption, a district heating and cooling system will be built Which or thefollowing may be excluded from the system to achieve Green Intra structure and Buildings Credit. District Heating and Cooling?

A. Schools

B. Hospitals

C. Multi-family buildings

D. Single-family residences

ANSWER: D

Explanation:

Single-family residences may be excluded when documenting the District Heating and Cooling requirements under the LEED Neighborhood Development Green Infrastructure and Buildings credit. District energy systems are intended to serve a substantial, connected building load through centralized heating, cooling, or both, improving efficiency and enabling lower-carbon energy sources at the community scale. However, the credit recognizes that extending district-energy distribution infrastructure to individual detached homes can be impractical because these buildings are dispersed, have comparatively small individual loads, and require many separate service connections. The LEED credit language therefore permits single-family homes to be excluded from the district heating and cooling connection calculation. This flexibility lets a project team focus the system on the building types that can most effectively support a viable district-energy network while still meeting the credit's community-scale energy-performance intent. The project should document the connected buildings and loads, the district-energy system design, and the basis for any permitted exclusions in the LEED submission. See the USGBC Green Infrastructure and Buildings credit category and the LEED v4.1 resources for applicable credit requirements and documentation guidance.

QUESTION NO: 40

Which of the following strategies would benefit the Sustainable Sites category of LEED? (Choose 2)

A. Locating a project within 100 feet a river

B. Not using landscape irrigation

C. Choosing a previously developed site

D. Using electricity generated on the project site.

E. Choosing a site in a densely populated community

ANSWER: C E

Explanation:

Choosing a previously developed site benefits LEED Sustainable Sites goals by directing development toward land that has already been disturbed or developed, rather than converting undeveloped land. This approach helps conserve habitat, natural landscapes, and other sensitive site resources. It also supports more responsible land-use decisions by reducing pressure to expand development into greenfields.

Choosing a site in a densely populated community supports sustainable site planning because established communities generally provide existing infrastructure, services, and development patterns that can accommodate additional occupants. Locating projects in these areas can help limit sprawl and make more effective use of previously developed land and community resources. These strategies align with LEED's emphasis on site selection, protection of ecological resources, and development practices that reduce adverse effects associated with conventional site development. The U.S. Green Building Council describes Sustainable Sites as addressing project-site impacts and protecting ecosystems, while LEED's location-related guidance supports development choices that reduce sprawl and strengthen existing communities. See USGBC Sustainable Sites credits and USGBC Location and Transportation credits.

QUESTION NO: 41

A project team is selecting the HVAC system for the tenant space. Which primary factors should be considered to minimize the environmental impact of the system (select two)?

A. Energy performance

B. First cost

C. Expected life

D. Lead time

ANSWER: A C

Explanation:

Energy performance and **Expected life** are the primary environmental considerations when selecting an HVAC system. HVAC equipment commonly represents a substantial portion of a tenant space's operational energy demand. Selecting equipment with strong energy performance reduces the electricity or fuel required to provide heating, cooling, and ventilation over its operating life. This reduces associated greenhouse-gas emissions and other environmental impacts from energy generation. In practice, the team should evaluate appropriate efficiency metrics for the equipment type and operating conditions, such as seasonal cooling efficiency, heating efficiency, part-load performance, and controls compatibility.

Expected life is also essential because environmental impact includes more than operational energy. A system that provides a long, reliable service life can defer replacement, reducing the frequency of material extraction, manufacturing, transport, installation, refrigerant management, and end-of-life disposal associated with new equipment. Considering both efficient operation and durable service life supports a life-cycle perspective, which is central to LEED's approach to reducing building-related environmental impacts. These factors should be evaluated together with the space's anticipated loads, hours of operation, maintenance capability, and future flexibility. See the USGBC LEED v4 resources and the U.S. Department of Energy HVAC guidance.

QUESTION NO: 42

Life-cycle assessment is used to determine the _____?

A. Balance of natural cycles such as the hydrologic cycle

B. Environmental systems affected over the life of a building.

C. Environmental aspects and potential impacts of a given product

D. Life span of a building and its components

ANSWER: C

Explanation:

Life-cycle assessment is used to determine the environmental aspects and potential impacts associated with a product throughout its life cycle. In LEED and sustainable-design practice, this means evaluating inputs and outputs—including raw-material extraction, manufacturing, transportation, installation, use, maintenance, and end-of-life treatment—to understand impacts such as resource depletion, energy use, emissions, waste, and effects on human health and ecosystems. This whole-life perspective helps project teams avoid shifting an environmental burden from one stage to another; for example, a product with low impacts during installation may have greater impacts during manufacturing or disposal. The ISO framework for life-cycle assessment describes the process as compiling and evaluating inputs, outputs, and potential environmental impacts of a product system across its life cycle. In LEED, whole-building life-cycle assessment can be used to compare design alternatives and demonstrate reductions in environmental impacts relative to a baseline building. Accordingly, "Environmental aspects and potential impacts of a given product" accurately states what an LCA is intended to identify and evaluate. See ISO 14040: Environmental management—Life cycle assessment and the USGBC LEED Materials and Resources—Building Life-Cycle Impact Reduction credit information.

QUESTION NO: 43

Which of the following strategies can reduce the environmental impacts of building materials before they are installed on a project? (Choose 2)

A. Reusing salvaged building materials

B. Selecting products with recycled content

C. Sending usable materials to a landfill

D. Selecting products solely because of higher first cost

E. Replacing durable materials before the end of their useful life

ANSWER: A B

Explanation:

Reusing salvaged building materials can reduce environmental impacts by extending the useful life of products that might otherwise be discarded. This can avoid some of the extraction, processing, and manufacturing impacts associated with producing new materials. Selecting products with recycled content can also reduce demand for virgin raw materials and create markets for recovered material streams.

Sending usable materials to a landfill does not preserve their value or reduce upstream material impacts. Selecting a product solely because it has a higher initial cost does not demonstrate an environmental benefit. LEED Materials and Resources strategies encourage project teams to consider material reuse, product transparency, responsible sourcing, and waste reduction throughout the design and construction process. See the EPA Sustainable Materials Management overview and the USGBC Materials and Resources credit resources.

QUESTION NO: 44

What are the benefits of rainwater harvesting in areas with substantial rainfall spikes?

A. Helps to offset air pollution

B. Helps to maintain required firewater levels

C. Keeps water out of storm sewers

D. Little-to-no benefit since precipitation is seasonal

ANSWER: C

Explanation:

“Keeps water out of storm sewers” is correct because rainwater-harvesting systems capture precipitation close to where it falls and retain it for later use, infiltration, or controlled release. In locations that experience substantial rainfall spikes, roofs and other impervious surfaces can generate a large volume of runoff in a short period. Directing that runoff into rain barrels, cisterns, or similar storage measures reduces the immediate flow entering municipal storm-sewer infrastructure. This supports LEED’s rainwater-management intent: managing rainfall on site, limiting runoff volume, and reducing the impacts associated with intense storm events.

Stored rainwater can also be used for appropriate nonpotable purposes, depending on local regulations and system design. However, the key benefit addressed by the question is stormwater control during peak precipitation. By slowing, storing, and potentially reusing rainwater, harvesting systems help decrease the hydraulic burden on downstream drainage networks and can contribute to reduced localized flooding and erosion risks. USGBC describes LEED rainwater-management strategies as approaches that manage rainfall runoff and lessen impacts on receiving waters. See the USGBC LEED Rainwater Management credit and the EPA’s overview of green infrastructure and stormwater management.

QUESTION NO: 45

Which of the following is NOT a responsibility of the Commissioning Authority (CxA) as it relates to LEED?

A. Develop and incorporate commissioning requirements into the construction documents

B. Develop the Basis of Design (BOD)

C. Develop and implement a commissioning plan

D. Verify the installation and performance of the systems to be commissioned

E. Complete a summary commissioning report

ANSWER: B

Explanation:

Develop the Basis of Design (BOD) is the correct answer because the BOD is a design-team document, not a commissioning deliverable created by the Commissioning Authority. It records the technical reasoning behind the design solution, including the systems, assemblies, and methods selected to meet the Owner's Project Requirements (OPR). The design team develops the BOD as the project design progresses, using the OPR as a key input.

For LEED commissioning, the Commissioning Authority uses the OPR and BOD to understand the intended project outcomes and design intent, then reviews those documents for clarity, completeness, and consistency as part of the commissioning process. This review supports effective commissioning by establishing the criteria against which installed systems and their performance can be evaluated. The CxA's commissioning work includes planning, documenting commissioning requirements, verifying installation and functional performance, and reporting results, but authorship of the design rationale remains with the design team. See the U.S. Green Building Council's Commissioning credit overview and the Whole Building Design Guide's Building Commissioning guidance.

QUESTION NO: 46

Which of the following strategies can improve occupants' ability to control lighting conditions? (Choose 2)

A. Individual task-light controls

B. Daylight-responsive dimming controls

C. Continuously operating lighting with no local switches

D. Decorative fixtures with higher wattage lamps

E. Centralized lighting controls accessible only to maintenance staff

ANSWER: A B

Explanation:

Individual lighting controls allow occupants to adjust lighting in their immediate work area to suit visual tasks and personal preferences. This can improve visual comfort while avoiding unnecessary lighting energy use. Automatic daylight-responsive controls can also improve lighting conditions by reducing electric-light output when sufficient daylight is available.

Providing permanently illuminated spaces without controls does not give occupants the ability to adjust lighting. Similarly, increasing the number of decorative fixtures may increase lighting levels but does not provide meaningful occupant control. LEED Indoor Environmental Quality strategies recognize both lighting quality and occupant control as important components of a healthy indoor environment. See the U.S. Department of Energy lighting controls guidance and the USGBC Indoor Environmental Quality credit resources.

QUESTION NO: 47

Which of the following are NOT addressed in the Sustainable Sites category of LEED? (Choose 2)

A. Daylighting

B. Heat Island Effect

C. Light Pollution Reduction

D. Greenfields

E. Waste Management

F. Public Transportation Access

ANSWER: A E

Explanation:

Daylighting and Waste Management are the two topics not addressed under the Sustainable Sites category in the LEED rating-system framework reflected by this question. Daylighting is an indoor design strategy evaluated through the Indoor Environmental Quality category. It focuses on providing occupants with useful daylight and views while supporting visual comfort and building performance. Waste Management belongs to the Materials and Resources category, where LEED evaluates planning for construction and demolition waste as well as ongoing management of recyclable and reusable materials.

Sustainable Sites addresses the environmental relationship between a project and its site. Its scope includes issues such as reducing heat-island effects, limiting light pollution, protecting site conditions, and—in the LEED versions that organize transportation within Sustainable Sites—encouraging alternatives to single-occupant vehicle travel, including public-transit access. These distinctions are important because LEED assigns each sustainability strategy to the category that best matches the environmental outcome being measured. The U.S. Green Building Council provides LEED rating-system resources at USGBC LEED and credit information at USGBC Credit Library.

QUESTION NO: 48

Which of the following is required when documenting a LEED Pilot Credit?

A. Compliance letter

B. LEED AP approval

C. Innovation narrative

D. Pilot Credit registration

ANSWER: C

Explanation:

Innovation narrative is required because a LEED Pilot Credit is pursued and documented as an Innovation strategy. The narrative provides the project team's clear, project-specific account of how the pilot-credit requirements were met. It should communicate the strategy's intent, the measures implemented by the project, and the evidence submitted to demonstrate compliance with the selected pilot credit's requirements. This narrative gives the reviewer sufficient context to connect the project's approach and supporting documentation to the pilot credit's stated goals and compliance path. Pilot credits are periodically tested and refined through USGBC's LEED Pilot Credit Library, so the applicable requirements and submittal expectations must be confirmed for the specific pilot credit selected by the project. A focused innovation narrative is therefore an essential component of a complete, reviewable submission: it describes how the team applied the pilot measure in the actual project rather than merely identifying that the credit was selected. USGBC explains that pilot credits allow projects to test new LEED strategies through the LEED Pilot Credit Library. Additional LEED credit and documentation resources are available through USGBC's LEED rating system information.

QUESTION NO: 49

Which of the following statements are true about submitting a Credit Interpretation Request (CIR)?

(Choose 3)

A. CIR should be submitted using LEED Online

B. It is helpful submit drawings or attachments that help explain the question

C. Each CIR must only be for one credit or prerequisite

D. CIR should be in a letter format

E. CIRs shall not contain in excess of 600 words

ANSWER: A C E

Explanation:

“CIR should be submitted using LEED Online,” “Each CIR must only be for one credit or prerequisite,” and “CIRs shall not contain in excess of 600 words” reflect the required CIR submission process. A Credit Interpretation Request is a formal channel for a project team to obtain a ruling when published LEED requirements or reference guidance do not adequately resolve a project-specific technical question. The request is submitted through the project’s LEED Online platform, which connects the inquiry and eventual ruling to the applicable LEED rating system and project record.

A CIR must be tightly scoped to a single prerequisite or credit. Keeping the request focused enables the reviewer to evaluate the precise compliance issue and issue a ruling that can be applied consistently. The 600-word maximum similarly requires teams to present the relevant facts, calculations, constraints, and proposed approach concisely. Clear, focused requests help ensure that the resulting ruling directly addresses the project’s interpretation issue and can be incorporated into its certification documentation. USGBC’s CIR guidance describes LEED Online submission, the one-credit-or-prerequisite scope, and the request-format requirements. See USGBC Credit Interpretation Rulings guidance and USGBC LEED v4 resources.

QUESTION NO: 50

Which of the following statements must be true in order to achieve the Water Metering Credit?

A. All meters must be recorded weekly and shared with USGBC over a five-year period beginning on the date the project accepts LEED certification

B. All meters must be recorded biweekly and shared with USGBC over a three-year period begin-ning on the date the project accepts LEED certification

C. All meters must be recorded biweekly and shared with USGBC over a five-year period begin-ning on the registration date of the LEED project

D. All meters must be recorded weekly and shared with USGBC over a three-year period begin-ning on January 1st of the year in which the project accepts LEED certification

ANSWER: A

Explanation:

All meters must be recorded weekly and shared with USGBC over a five-year period beginning on the date the project accepts LEED certification. This reflects the ongoing-performance intent of the LEED Operations and Maintenance Water Metering credit: metering is not merely installed for a one-time submittal, but is used to collect consistent operational water-use information after certification. Recording meter data at least weekly provides sufficiently frequent data to identify water-use patterns, unusual consumption, and potential leaks or equipment problems. The five-year data-sharing commitment supports LEED’s emphasis on measured, verified building performance and enables USGBC to evaluate water-use outcomes over time. The reporting period begins when the project accepts its LEED certification, tying the commitment to the certified project’s operational phase rather than to an earlier administrative milestone such as registration. This requirement applies to the water meters used to satisfy the credit and helps ensure that the project maintains the ability to monitor and manage water consumption throughout the post-certification period. LEED v4.1 credit requirements and rating-system resources are available through USGBC’s LEED v4.1 page and the USGBC LEED Credit Library.

QUESTION NO: 51

What standard can be used to calculate a building's energy consumption baseline?

A. ASHRAE 90.1-2007

B. ASHRAE 62.1-2007

C. ASHRAE 55-2004

D. Green Seal Standard

E. Green-e Standard

ANSWER: A

Explanation:

ASHRAE 90.1-2007 is the applicable baseline standard for this question because it establishes the minimum energy-efficiency requirements and the prescribed performance-rating methodology used to model a reference or baseline building. In the LEED rating-system context that cites this edition, project teams create a proposed-building energy model and compare it with a baseline model defined under Appendix G of ASHRAE 90.1-2007. That comparison quantifies projected energy-cost or energy-performance improvement and supports energy-performance credit calculations. The baseline is not simply the project's historical utility consumption; it is a standardized, code-based simulation model with defined assumptions for envelope, HVAC, lighting, service water heating, and other regulated energy uses. This consistent method allows proposed designs to be evaluated fairly against a reference building of the same general size, occupancy, and operating characteristics. ASHRAE identifies Standard 90.1 as its energy standard for buildings except low-rise residential buildings, and its scope includes minimum energy-efficiency requirements for building design and operation. For the edition specified by this LEED question, ASHRAE 90.1-2007 is therefore the standard used to calculate the building energy-consumption baseline. See ASHRAE Standard 90.1 and the ASHRAE standards archive.

QUESTION NO: 52

Which two standards are used to establish what vehicles qualify as low-emitting and fuel-efficient vehicles? (Choose 2)

A. California Air Resources Board ZEV

B. American Council for an Energy-Efficient Economy Green Book

C. The Greenguard Certification Program

D. Green Seal Standard

E. Green-e Product Certification

ANSWER: A B

Explanation:

California Air Resources Board ZEV and American Council for an Energy-Efficient Economy Green Book are the vehicle-evaluation benchmarks used by LEED's Green Vehicles requirements. The California Air Resources Board Zero Emission Vehicle standard establishes a regulatory framework for vehicles with no tailpipe emissions, including qualifying battery-electric and fuel-cell vehicles. This provides a clear emissions-based threshold for identifying the cleanest vehicle technologies. CARB describes the ZEV program and its role in increasing deployment of zero-emission passenger vehicles at California Air Resources Board: ZEV Program.

The American Council for an Energy-Efficient Economy Green Book, now represented through ACEEE's GreenerCars vehicle ratings, evaluates vehicles using an environmental performance methodology that incorporates fuel efficiency and pollution-related impacts. LEED uses this type of independent rating source to identify conventional and alternative-fuel vehicles that offer strong overall environmental performance, including low-emitting and fuel-efficient choices. ACEEE's current vehicle environmental ratings and methodology are available through ACEEE GreenerCars. Together, these standards address both zero-emission eligibility and high environmental-performance vehicle ratings for LEED compliance.