Free Questions for LEED-Green-Associate

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Question 1

Question Type: MultipleChoice

A civil engineer would like to incorporate strategies for rainwater management in order to prevent the flooding occurring at the project site. Which design technique should be used to help prevent stormwater damage to the building and surrounding site?

Options:

A- Install a bioswale
B- Direct runoff into a stream
C- Pave the site with high Solar Reflectance Index (SRI) material
D- Pave the site with impervious material

Answer:

A

Explanation:

Installing a bioswale is a design technique that should be used to help prevent stormwater damage to the building and surrounding site. A bioswale is a vegetated channel that conveys stormwater runoff while filtering pollutants, reducing peak flow rates, increasing infiltration, and providing habitat. A bioswale can help prevent stormwater damage by reducing erosion, flooding, sedimentation, and contamination of waterways. The other options are not design techniques that should be used to help prevent stormwater damage to the building and surrounding site. Directing runoff into a stream is a design technique that can cause stormwater damage by increasing the volume and velocity of water entering the stream, resulting in erosion, flooding, sedimentation, and contamination of the stream. Paving the site with high Solar Reflectance Index (SRI) material is a design technique that can reduce the heat island effect by reflecting more solar radiation than conventional paving materials, but it does not prevent stormwater damage as it does not reduce runoff or improve water quality. Paving the site with impervious material is a design technique that can cause stormwater damage by preventing infiltration and increasing runoff, resulting in erosion, flooding, sedimentation, and contamination of waterways.Reference: LEED Green Associate Candidate Handbook, page 32; USGBC [Sustainable Sites], page 4-5.

Question 2

Question Type: MultipleChoice

What is the term for collecting, reprocessing, marketing and using materials that are diverted or recovered from the solid waste stream?

Options:

A- Recycling
B- Chain -of-custody
C- Salvaged materials
D- Building material reuse

Answer:

A

Explanation:

Recycling is the term for collecting, reprocessing, marketing and using materials that are diverted or recovered from the solid waste stream. Recycling is a process that transforms waste materials into new products that can be used for different purposes. Recycling reduces the amount of waste sent to landfills or incinerators, conserves natural resources, saves energy, and reduces greenhouse gas emissions. The LEED Green Associate Candidate Handbook states that one of the intents of the Materials and Resources category is to ''reduce waste through recycling during construction and occupancy'' [1, p. 15].Reference:LEED Green Associate Candidate Handbook, [Recycling Basics | U.S. Environmental Protection Agency]

Question 3

Question Type: MultipleChoice

Which of the following interior items contributes to a comfortable acoustic environment?

Options:

A- Soft surfaces
B- Wood cabinets
C- Hollow metal doors
D- Glass cubicle partitions

Answer:

A

Explanation:

Soft surfaces contribute to a comfortable acoustic environment by absorbing sound waves and reducing noise levels. This can include items such as carpets, upholstered furniture, and acoustic ceiling tiles. In contrast, hard surfaces (like wood cabinets, hollow metal doors, or glass partitions) can reflect sound waves and increase noise levels.Reference: LEED Green Associate Candidate Handbook, U.S. Green Building Council resources

Question 4

Question Type: MultipleChoice

Which type of site Is appropriate for development of LEED projects?

Options:

A- Floodplain
B- Greenfield
C- Brownfield
D- Undeveloped

Answer:

C

Explanation:

A brownfield site is appropriate for development of LEED projects because it is a site that has been previously used for industrial or commercial purposes and may be contaminated by pollutants or hazardous substances. Developing a brownfield site can help reduce environmental impacts, such as soil erosion, habitat loss, and water consumption, by reusing existing infrastructure and restoring degraded land.LEED projects can earn credits for developing on brownfield sites under the Sustainable Sites category.Reference:LEED v4 BD+C Reference Guide, Sustainable Sites, page 35; Best Management Practice #14: Alternative Water Sources1

Question 5

Question Type: MultipleChoice

When the project team develops the project and building construction budget, which of the following should be incorporated?

Options:

A- Green power purchased from the local power company
B- Time in the schedule for unique materials and systems
C- Contingency allowances for additional research and analysis of options
D- The future environmental impact of building maintenance operations

Answer:

B

Explanation:

When developing the project and building construction budget, the project team should incorporate time in the schedule for unique materials and systems. This is because some green building strategies may require materials or systems that are not readily available or familiar to the local market. For example, using recycled or salvaged materials may require more time for sourcing and delivery. Similarly, installing renewable energy systems or high-performance HVAC systems may require more time for design and commissioning. Therefore, the project team should plan ahead and allocate sufficient time for these aspects of the project.Reference:LEED v4 BD+C Reference Guide, Integrative Process, page 28

Question 6

Question Type: MultipleChoice

Which methodology is used to evaluate and study the economic performance of a building or system over its entire life?

Options:

A- Energy costing

B- Triple bottom line
C- Materials assessment
D- Life cycle assessment

Answer:

D

Explanation:

The methodology that is used to evaluate and study the economic performance of a building or system over its entire life is life cycle assessment (LCA).LCA is a technique that assesses the environmental aspects and potential impacts associated with a product, process, or service throughout its life cycle, from raw material extraction to end-of-life disposal or recycling7.LCA can also include an economic dimension by incorporating life cycle costing (LCC), which estimates the total costs of ownership over the life cycle of a product or system8. By combining LCA and LCC, one can evaluate the environmental and economic performance of a building or system in a holistic way, taking into account both the initial investment costs and the long-term operational costs.This can help identify trade-offs and synergies between environmental and economic objectives, as well as opportunities for improving efficiency and reducing impacts9.Reference:Life-cycle assessment7; What is Life Cycle Assessment (LCA)?8; Life Cycle Costing in Construction Projects: A Case Study of a Municipal Building in Portugal9

Question 7

Question Type: MultipleChoice

What does the U.S. Green Building Council (USGBC) administer?

Options:

A- LEED Green Associate exams
B- LEED rating systems development
C- LEED Credentialing Programs related to Green Building practice
D- LEED Project Certification through third-party certification bodies accredited by the American National Standards Institute (ANSI)

Answer:

B

Explanation:

The U.S. Green Building Council (USGBC) administers the LEED rating systems development. The LEED rating systems are frameworks that provide guidance and criteria for designing, constructing, operating, and maintaining green buildings. The USGBC is responsible for developing, maintaining, and updating the LEED rating systems through a consensus-based process that involves various stakeholders, such as technical experts, industry leaders, government representatives, and public comments. The LEED Green Associate Candidate Handbook states that ''USGBC is committed to transforming the way our buildings are designed, constructed and operated through LEED'' [1, p. 7].Reference:LEED Green Associate Candidate Handbook, [LEED Rating Systems | U.S. Green Building Council]

Question 8

Question Type: MultipleChoice

Designers and builders can construct a green building that uses significantly less water than a conventional building by incorporating which opportunity?

Options:

A- Use of potable water
B- Native plant landscapes
C- Invasive plant landscapes
D- Not tracking water metering

Answer:

B

Explanation:

Designers and builders can construct a green building that uses significantly less water than a conventional building by incorporating native plant landscapes. Native plant landscapes are plants that are adapted to the local climate and soil conditions, and require little or no irrigation, fertilization, or pesticides. They also provide habitat for wildlife, reduce stormwater runoff, and enhance the aesthetic value of the site. The LEED Green Associate Candidate Handbook states that one of the intents of the Sustainable Sites category is to ''conserve water by using native or adapted plants'' [1, p. 13].Reference: [LEED Green Associate Candidate Handbook], [Native Plants | U.S. Environmental Protection Agency]

Question 9

Question Type: MultipleChoice

The most efficient way for building users to rate the heating and air-conditioning and other aspects of work spaces is through

Options:

A- an occupant survey
B- a meeting with the owner
C- a facilities manager survey
D- a meeting with the line manager

Answer:

A

Explanation:

An occupant survey is the most efficient way for building users to rate the heating and air-conditioning and other aspects of work spaces. An occupant survey is a tool that collects feedback from building occupants about their satisfaction with various aspects of their indoor environment, such as thermal comfort, lighting quality, acoustic quality, air quality, and spatial layout. An occupant survey can help identify areas for improvement, monitor performance, evaluate design strategies, and inform future decisions. The LEED Green Associate Candidate Handbook states that one of the strategies for achieving indoor environmental quality is to ''conduct occupant surveys on thermal comfort'' [1, p. 16].Reference:LEED Green Associate Candidate Handbook, [Occupant Surveys | Center for the Built Environment]

Question 10

Question Type: MultipleChoice

Which of the following is the reason Regional Priority credits are awarded?

Options:

A- To help meet economic goals
B- To encourage exemplary performance
C- To address local environmental issues
D- To promote innovation in building design

Answer:

C

Explanation:

Regional Priority credits are awarded to encourage projects to address local environmental issues that are of particular importance or concern for the region where the project is located. These issues may include water scarcity, air quality, habitat protection, or human health. Regional Priority credits are not new LEED credits, but rather existing credits that have been identified by regional councils or chapters of USGBC as having higher priority or relevance for their areas.Projects can earn up to four bonus points by achieving Regional Priority credits.Reference:LEED v4 BD+C Reference Guide, Introduction, page 13; LEED v4 Impact Category and Point Allocation Process Overview1

Question 11

Question Type: MultipleChoice

A company is considering investing in green power for its operations facilities, but is reluctant because of the high capital investment, maintenance costs and slow initial financial returns. Which of the following is a practical strategy to help the company overcome these obstacles?

Options:

A- Relocate the company to a region that is better suited for harnessing renewable energy
B- Divert the company's research and development funds to investment in large scale hydroelectric power
C- Host an on-site renewable energy generation system and agree to buy the power without owning the equipment
D- Hire employees to staff a new operations department in preparation for the maintenance needs of the new renewable energy equipment

Answer:

C

Explanation:

A charrette is an intensive, multi-disciplinary workshop with the aim of developing a design or vision for a project or planning activity. Charrettes are often conducted to design such things as parks and buildings, or to plan communities or transportation systems. A charrette should take place at the beginning of the project, when the design team can engage with all the stakeholders, including the client, users, consultants, contractors, regulators, and community members. A charrette at this stage can help to:

Establish clear goals and objectives for the project

Identify opportunities and constraints for the site and program

Generate creative and innovative ideas and solutions

Foster collaboration and consensus among diverse perspectives

Reduce conflicts and delays during later phases of the project

Enhance communication and trust among the project team

The other options are not appropriate phases for a charrette. Post commissioning is too late to influence the design or planning of the project. During the design process, some decisions may have already been made or some stakeholders may have been excluded. During the construction process, changes may be costly or impractical to implement.Reference: : Charrette

Question 12

Question Type: MultipleChoice

As of 1996, the Montreal Protocol banned the production of what chemical compound known to have ozone-depleting potential?

Options:

A- Chlorofluorocarbons (CFCs]
B- Hvdrofluorocarbons (HFCs)
C- Hvdrofluorocarbons Phaseout Management Plan (HPMP)
D- Hvdrochlorofluorocarbons (HCFCs)

Answer:

A

Explanation:

As of 1996, the Montreal Protocol banned the production of chlorofluorocarbons (CFCs), a chemical compound known to have ozone-depleting potential. CFCs are synthetic substances that were widely used as refrigerants, propellants, solvents, and foam-blowing agents. CFCs have high ozone depletion potential (ODP), which means they can destroy the ozone layer that protects the Earth from harmful ultraviolet radiation. The Montreal Protocol is an international treaty that aims to protect the ozone layer by phasing out the production and consumption of ozone-depleting substances.The Montreal Protocol banned the production of CFCs in 1996 for developed countries and in 2010 for developing countries1.Reference: LEED v4 Green Associate Candidate Handbook1, UNEP's Montreal Protocol

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