

April 2, 2018

1. How many points must a project earn to achieve the level of Certified?
  - A. 30-39
  - B. 40-49
  - C. 50-59
  - D. 60-69
  
2. How is lighting power density (LPD) measured?
  - A. Watts per hour
  - B. Lumens
  - C. Lighting power per area
  - D. Illuminance per square foot
  
3. In LEED Water Efficiency, gpm or liters per minute is the amount of water
  - A. used by air conditioners
  - B. used by flush fixtures
  - C. used by flow fixtures
  - D. used by dishwashers
  
4. Which of these describes the difference between greywater and black water?
  - A. Greywater can be used for drinking; black water can be used to flush toilets
  - B. Greywater can be used for swimming pools, black water can be used for irrigation
  - C. Greywater comes from Lav sinks, black water is waste water generated by toilets and urinals
  - D. Greywater comes from toilets and urinals, black water comes from Lav sinks
  
5. Which of these is the most efficient equipment for landscape irrigation?
  - A. Drip
  - B. High flow sprinklers
  - C. Overhead sprinklers
  - D. Revolving sprinklers
  
6. How many points are required to earn LEED silver?
  - A. 30-39
  - B. 40-49
  - C. 50-59
  - D. 60-69
  
7. Which of these is a Minimum Program Requirement for LEED project certification?
  - A. LEED AP
  - B. Project boundary that excludes portions of the site
  - C. Minimum project size
  - D. Open space

8. An owner wants to reduce the potable water used by the building and asked the design team to install a graywater system. Which of these is the best source of graywater for landscape irrigation?
  - A. Toilet
  - B. Urinal
  - C. Lav faucet
  - D. Janitor's sink
  
9. Which of these would help a project with selecting sustainable materials during construction?
  - A. Project Budget
  - B. LEED AP
  - C. Construction purchasing policy
  - D. Recycling policy and procedures guide
  
10. Which of these are a LEED for Building Design and Construction credit category found in the Scorecard?  
[Choose three]
  - A. Core and Shell
  - B. Education and Awareness
  - C. Sustainable Sites
  - D. Energy and Atmosphere
  - E. Water Use Reduction
  - F. Materials and Resources
  
11. A project team just completed a complete remodel of a tenant space. Which LEED rating system would you recommend for this project?
  - A. LEED for Building Design and Construction: New Construction
  - B. LEED for Interior Design and Construction: Commercial Interiors
  - C. LEED for Building Operations and Maintenance: Existing Buildings
  - D. LEED for Building Design and Construction: Retail
  
12. What is an approach that protects open space and farmland by emphasizing development with housing, jobs, and services near each other called?
  - A. Infill development
  - B. Smart growth
  - C. Brownfield
  - D. Urban Sprawl
  
13. Which of these is an approach to land management that mimic natural systems and manage rainwater as close to the source as possible include minimizing impervious surfaces, protecting soils, and enhancing native vegetation?
  - A. Zero lot line
  - B. Infill Development
  - C. Low-Impact Development
  - D. Life Cycle Assessment

14. What is the scope of the LEED Impact Category Protect Human Health from Direct Exposure to Negative Health Impacts?
- A. Building occupants and design & construction crew during the construction phase
  - B. Building occupants and construction crews within the project boundary
  - C. Building occupants and design & construction crew during the construction phase and use phase of the building cycle, within the project boundary
  - D. Building occupants and design & construction crew during the construction phase and use phase of the building cycle, within the project boundary and its immediate surroundings
15. The triple bottom line concept of sustainability incorporates what resources?
- A. Profit, Planet, People
  - B. Return on Investment, People, Planet
  - C. Community, Environment, Health
  - D. Return on Investment, Environment, Planet
16. What type of system slows the passing of materials and resources through the system and links elements to form new relationships and functions?
- A. Open Flow
  - B. Closed Flow
  - C. Open System
  - D. Closed System
17. What is the first step in the integrative design process?
- A. Set goals
  - B. Hire a LEED AP
  - C. Schedule project
  - D. Establish a budget
18. What system has the largest energy use in a commercial building?
- A. Lighting
  - B. Cooling
  - C. Space heating
  - D. Ventilation
19. Which of these is a key indicator of the impact category, Promote Sustainable and Regenerative Material Resources Cycles?
- A. Support Occupant Comfort and Well-Being
  - B. Move to Cyclical, Non-Depleting Material Cycles
  - C. GHG Emissions Reduction from Materials Embodied Energy Use
  - D. Sustainable Use and Management of Ecosystem Services
20. What design strategy could a civil engineer use in a new construction project to control rainwater and protect a waterbody located near the project?
- A. Bioswale
  - B. Impervious paving
  - C. Plant trees and shrubs
  - D. Compacted soil

21. In what credit category could a project team earn points for incorporating daylighting into their design?
- A. Sustainable Sites
  - B. Innovation
  - C. Energy and Atmosphere
  - D. Indoor Environmental Quality
22. Which of these are pre-consumer waste that could be used to make a different product? [choose three]
- A. Furniture
  - B. Sawdust
  - C. Computer
  - D. Walnut shells
  - E. Office supplies
  - F. Fabric cuttings
23. In 1996, the Montreal Protocol phased out the use of which of these substances?
- A. HCFCs
  - B. VOCs
  - C. CFCs
  - D. NH<sub>3</sub>
24. Which of these emissions should be minimized in order to protect workers during construction?
- A. Volatile Organic Compound (VOC)
  - B. Chlorofluorocarbon (CFC)
  - C. Hydrochlorofluorocarbons (HCFCs)
  - D. Hydrofluorocarbon (HFC)
25. Which of these is a strategy for improving indoor air quality during construction?
- A. Store moisture absorptive material on a slab
  - B. Store material in the mechanical room
  - C. Keep the building clean
  - D. Run the ventilation system with permanently installed filters
26. Thermal absorption by hardscape, such as dark, nonreflective pavement and buildings, and its subsequent radiation to surrounding areas is called
- A. Thermal Emittance
  - B. Solar Reflectance Index
  - C. Infrared Emittance
  - D. Heat Island Effect
27. Which of these areas contributes the most to the Heat Island Effect?
- A. Urban, Commercial
  - B. Rural, Suburban Residential
  - C. Urban, Suburban Residential
  - D. Rural, Single Family Residential

28. Which of these strategies should be used to promote more daylighting in a commercial office building?
- A. Place private offices along the perimeter of the building, place individual cubicles in the core
  - B. Place private offices all on one floor separate from cubicle spaces
  - C. Place individual cubicles along the perimeter of the building, place private offices in the core
  - D. Place individual cubicles near overhead lighting control switches
29. Which of these refers to the referenced standard Green Seal?
- A. Lumber
  - B. Pest Management
  - C. Carbon Dioxide Sensors
  - D. Custodial products and equipment
30. What building code adopted ASHRAE 189.1 as an alternative compliance path?
- A. SMACNA
  - B. ASHRAE 90.1
  - C. IGCC
  - D. California Title 24
31. LEED for New Construction projects are required achieve a minimum level of energy efficiency for the building and its systems using a baseline energy code. Which of these could a project use to meet that requirement?
- A. SMACNA
  - B. ASHRAE 90.1
  - C. EPAct
  - D. ASHRAE 62.1
32. What is the LEED standard for thermal comfort?
- A. ASHRAE Standard 55
  - B. ASHRAE Standard 62.1
  - C. ASHRAE Standard 90.1
  - D. ASHRAE Standard 52
33. ASHRAE Standards pertain to which of these credit categories?
- A. Sustainable Sites, Energy and Atmosphere
  - B. Materials and Resources, Indoor Environmental Quality
  - C. Energy and Atmosphere, Indoor Environmental Quality
  - D. Water Efficiency, Energy and Atmosphere
34. Which of these is responsible for reviewing a project's LEED certification and providing reports to the project team?
- A. SMACNA
  - B. ASHRAE
  - C. Green Business Certification Inc.
  - D. USGBC

35. Which of these individuals has the ultimate control over the LEED certification application?
- A. Owner
  - B. LEED AP
  - C. Commissioning Agent (Cx)
  - D. Project Administrator
36. A project team has three experts that are LEED APs. A civil engineer, an architect, and a general contractor. In what credit category can they help a project to earn a point?
- A. Sustainable Sites
  - B. Location and Transportation
  - C. Innovation
  - D. Core and Shell
37. Which of these is how an exemplary performance point can be earned, if available in the Reference Guide?
- A. Have at least three LEED APs on the project
  - B. Use a credit from a different rating system
  - C. Earn all the credits in a single category
  - D. Next incremental percentage threshold
38. Where can projects purchase renewable energy certificates (RECs)?
- A. Almost anywhere
  - B. Only in locations that have deregulated power
  - C. In areas that have a wind farm within 100 miles of the project
  - D. Only from a utility company that has a green pricing program
39. What is the purpose of Renewable Energy Certificates (RECs)?
- A. Support building more renewable energy and increase demand for green power
  - B. Investment opportunity
  - C. Tradable for higher value tangible commodities
  - D. To sell power at a premium rate
40. Which of these is the best site for a LEED project to build on?
- A. Floodplain
  - B. Habitat
  - C. Brownfield
  - D. Prime Farmland
41. Which of these describes a LEED for Neighborhood Development project?
- A. A Brownfield site with several housing developments
  - B. A previously developed site near a grocery store
  - C. A new development that protects open space and undeveloped areas and builds homes near jobs, schools and basic services.
  - D. A previously developed site with single family homes near a school
42. Which of these categories of refrigerants has the highest ozone depletion potential?
- A. HCFC
  - B. CFC
  - C. HFC
  - D. NH<sub>3</sub>

43. Which of these is an environmental impact due to the production of electricity?
- A. CFC
  - B. HCFC
  - C. NH<sub>3</sub>
  - D. Nitrogen Oxide
44. Which of these must a project do to become LEED certified?
- A. Earn 30 points
  - B. Hire a LEED AP
  - C. Complete all prerequisites
  - D. Implement a green purchasing policy
45. A project team designed an energy efficient building. The design incorporates daylighting and a reduced building footprint. What LEED categories would the design help the project with? [Choose three]
- A. Sustainable Sites
  - B. Water Efficiency
  - C. Materials and Resources
  - D. Energy and Atmosphere
  - E. Indoor Environmental Quality
46. Which of these is a strategy to help reduce the demand for landscape irrigation?
- A. Increase hardscape
  - B. Larger building footprint
  - C. Native plants
  - D. Capture and reuse rainwater
47. Collecting, storing, reusing, marketing, and diverting material to put it back into production is called?
- A. Triple Bottom Line
  - B. Recycling
  - C. Low Impact Development
  - D. Zero Waste
48. A project used a salvaged door from off site. What Materials and Resources credit can this contribute to?
- A. Low Emitting Materials
  - B. Material Reuse
  - C. Life-Cycle Assessment
  - D. Construction Waste Management
49. Which of these is an environmental benefit of using sustainable products that are locally sourced?
- A. Increases local revenue
  - B. Encourages responsible forest management
  - C. Reduces the environmental harms associated with transportation
  - D. Reduces the construction budget

50. What is an intense collaborative meeting designed to identify innovative strategies to achieve a projects sustainability goals called?
- A. Charrette
  - B. Team Meeting
  - C. Task Group
  - D. Town Hall Meeting
51. A LEED for Interior Design and Construction team is remodeling a tenant space. What is the first step they should take?
- A. Hire a LEED AP
  - B. Hold a Charrette
  - C. Look for areas of Improvement
  - D. Apply for a building permit
52. If not mitigated, over time a building resource use
- A. Stays about the same
  - B. Decreases
  - C. Neither increases or decreases
  - D. Increases
53. Which of these are the most important LEED impact categories?
- A. Green Economy / Biodiversity
  - B. Green Economy / Protect Human Health
  - C. Reduce Climate Change / Protect Human Health
  - D. Water Resources / Biodiversity
54. Which of these processes identifies inefficiencies and restores high levels of performance in existing buildings in order to keep a building on track for meeting or exceeding the original operational goals.
- A. Energy Modeling
  - B. Commissioning
  - C. Building Flush-out
  - D. Retrocommissioning
55. What is the process of verifying and documenting that a building and all of its systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the owner's project requirements called?
- A. Retrocommissioning
  - B. Energy Star
  - C. Commissioning
  - D. Adapted Reuse
56. Who is the most responsible individual for the energy efficiency performance of a building on an on-going basis?
- A. Facility manager
  - B. LEED AP
  - C. Contractor
  - D. Commissioning Agent

57. Which of these would help a project with providing occupant comfort and control strategies?
- A. Automatic fans, task lighting, ergonomic furniture
  - B. Operable windows, occupancy sensors, ergonomic furniture
  - C. Operable windows, task lighting, ergonomic furniture
  - D. Adjustable vents, overhead lighting, high windows
58. What must a construction waste management plan include?
- A. Quantity of excavated soil
  - B. Volume/weight of waste diverted
  - C. Hazardous material
  - D. Land clearing debris
59. Which of these can help a project to stay on track during construction with the project's sustainability goals?
- A. Project checklist
  - B. Schedule
  - C. Construction Budget
  - D. Construction Activity Pollution Prevention Plan
60. LEED Online is used to
- A. Purchase a LEED Reference Guide
  - B. Manage the entire LEED certification process
  - C. Register to take a LEED exam
  - D. Hire a LEED AP
61. The LEED rating systems scorecard is based on
- A. A maximum of 110 base points
  - B. A maximum of 100 base points
  - C. A maximum of 80 base points
  - D. A maximum of 120 base points
62. What tool is used by LEED projects to track energy usage and performance?
- A. SMACNA
  - B. ASHRAE
  - C. Energy Star Portfolio Manager
  - D. International Organization for Standardization (ISO)
63. In LEED Water Efficiency credits projects compare a baseline to
- A. other LEED projects
  - B. building average usage
  - C. calculated actual design
  - D. Energy Star
64. Exemplary performance for Sustainable Sites credits is earned in which credit category?
- A. Sustainable Sites
  - B. Water Efficiency
  - C. Innovation
  - D. Regional Priority

65. What is the purpose of an occupant survey for thermal comfort?
- A. To allow occupants to leave early
  - B. To reduce the buildings total energy cost
  - C. Increase occupant health which may be compromised by poor outdoor air quality
  - D. To identify and correct areas of dissatisfaction
66. What can a project team do to help to gain support for a LEED project?
- A. Conduct a survey
  - B. Sell LEED bumper stickers
  - C. Visit the planning department
  - D. Minimize communication with surrounding neighbors
67. Which of these strategies would help with achieving both Heat Island Reduction and Rainwater management? [Choose three]
- A. Overhead Trellis
  - B. Open-grid pavers
  - C. Vegetated roof
  - D. Trees / plants
68. Which of these is a sustainable site design strategy?
- A. Low flow fixtures
  - B. Downsize HVAC system
  - C. Use native plants to attract local fauna
  - D. Building Orientation
69. Which of these would help a project with achieving the credit Surrounding Density and Diverse Uses?
- A. Slow street speeds
  - B. Single Family Homes near a grocery store
  - C. Bicycle network
  - D. Dense Street Grid Pattern
70. Which of these is the best site for a project to locate on to achieve the credit Surrounding Density and Diverse Uses?
- A. A national park with car access only
  - B. A site with access to one transit location and a single grocery store
  - C. A single-family home neighborhood near a movie theater
  - D. A site with access to 5 transit locations and several basic services
71. Which of these could help to promote pedestrian access to a project site?
- A. Reduce vehicle speed in the parking lot
  - B. Provide a shuttle to a nearby transit location
  - C. Provide additional parking lot spaces
  - D. Use of a public nature trail that connects the building to other buildings near the site

72. The triple bottom line concept incorporates a long-term view for assessing potential effects and best practices for natural capital, social capital, and what other resource?
- A. Political capital
  - B. Business capital
  - C. Economic capital
  - D. Corporate capital
73. Besides humidity and air temperature, what else in the list is a consideration for human thermal comfort?
- A. Sunlight
  - B. Desk lamp
  - C. Diffuser
  - D. Air speed
74. What is the correct way to refer to a project that has achieved LEED certification?
- A. LEED Certified Building
  - B. LEED's Certified Building
  - C. LEED Certified certified
  - D. LEED certified
75. Who can use the USGBC Member logo?
- A. USGBC members in active standing
  - B. LEED Accredited Professionals
  - C. LEED Certified Projects
  - D. Green Product Manufacturers
76. Which of these is a renewable energy strategy?
- A. Incinerating municipal waste
  - B. Solar thermal panel
  - C. Ground-source heat pump
  - D. Daylighting
77. An owner of a project would like to encourage the building occupants to use alternative transportation. Which of these could help?
- A. Underground parking
  - B. Increase parking lot size
  - C. Alternative transportation incentive program
  - D. Increase the number of carpool parking locations
78. A project owner wants to evaluate the environmental effects associated with choosing materials. Which of these tools should the team use?
- A. Life-Cycle Costing (LCC)
  - B. Life-Cycle Evaluation (LCE)
  - C. Life-Cycle Development (LCD)
  - D. Life-Cycle Analysis (LCA)

79. What tool helps project teams to select materials with greater overall environmental benefit?
- A. SMACNA
  - B. Life-Cycle Costing (LCC)
  - C. Life-Cycle Analysis (LCA)
  - D. International Organization of Standardization (ISO)
80. Which of these is a principle concept of the integrative process?
- A. Positive feedback
  - B. Closed loops
  - C. Negative feedback
  - D. Systems thinking
81. Which of the following permanently installed building products contribute to achieving Material and Resources credits?
- A. Framing
  - B. Elevator
  - C. Process Equipment
  - D. Cooling Tower
82. Which of these would help to contribute to Sustainable Sites credits?
- A. Minimize imperviousness, located near a bus stop, Capture and reuse rainwater
  - B. Maximize perviousness, open-grid pavers, Capture and reuse rainwater
  - C. Maximize imperviousness, open-grid pavers, Capture and reuse rainwater
  - D. Minimize perviousness, open-grid pavers, Capture and reuse rainwater
83. An item discarded on-site and used by the project can contribute to
- A. Recycled Material
  - B. Innovation
  - C. Materials Reuse
  - D. Regional Materials
84. Which of these is a good strategy for protecting the indoor air quality during construction?
- A. Cover ducts with plastic
  - B. Limit sawing to one room
  - C. Run the permanent air handlers with the final filtration media installed
  - D. Allow smoking only outside the building
85. What is process water?
- A. On-site collected rainwater
  - B. Water that is used for industrial processes and building systems, such as cooling towers and chillers.
  - C. Reclaimed wastewater
  - D. Cooling tower makeup water
86. Which of these is a process energy source? [Choose two]
- A. Interior Lighting
  - B. Computers
  - C. Exterior Lighting
  - D. Kitchen Equipment
  - E. HVAC Power

87. Which of these is a strategy for reducing potable water use?
- A. Increase landscaped areas
  - B. Install a cooling tower
  - C. Native plants
  - D. Use a roof surface with a cool topping
88. What is the reason for the Water Efficiency credit category?
- A. Reduce cost for water
  - B. Eliminate potable water use in buildings
  - C. Eliminate the need for irrigation
  - D. Protect the earths potable water source
89. A site that has been graded is called
- A. Greenfield
  - B. Previously developed
  - C. Brownfield
  - D. Infill
90. How can captured rainwater be used on a project? [Choose two]
- A. Showers
  - B. Landscape Irrigation
  - C. Swimming pools
  - D. Flushing toilets and urinals
  - E. Dishwashers
91. When selecting a location, which of these should a team consider?
- A. Economy
  - B. Political climate
  - C. Existing infrastructure
  - D. Access to fast food
92. Purchasing green power helps to reduce
- A. Emissions
  - B. Electricity Costs
  - C. Building energy use
  - D. Commissioning costs
93. Which of these can be used to verify the location of services?
- A. Arial photo
  - B. Site plan
  - C. Phone Book
  - D. Map of area showing locations
94. What must a design team do to earn the Integrative Process credit?
- A. Analyze synergies
  - B. Hire a LEED AP
  - C. Work independently
  - D. Use Life-Cycle Costing