

1. As of 1996, the Montreal Protocol banned the use of what chemical compound known to cause ozone depletion?
 - A. Hydrofluorocarbons (HFC)
 - B. Hydropentachlorodimethyl (HPD)
 - C. Ammonium (NH₃)
 - D. Chlorofluorocarbons (CFC)

2. The LEED rating system scorecard is based on
 - A. 100 base points
 - B. 110 base points
 - C. 15 points per category and 7 prerequisites
 - D. 5 prerequisites per credit category

3. Waste generated by households or commercial, industrial and institutional facilities in their role as end users of a product that can no longer be used for its intended purpose is called
 - A. Emissions
 - B. Zero Waste
 - C. Preconsumer recycled content
 - D. Postconsumer recycled content

4. What process can be applied to existing buildings to keep a building on track for meeting or exceeding the original operational goals?
 - A. ENERGY STAR
 - B. Commissioning
 - C. Retrocommissioning
 - D. Training

5. What standard is used by LEED rating systems to determine minimum indoor air quality?
 - A. ASHRAE Standard 55
 - B. ASHRAE Standard 90.1
 - C. ASHRAE Standard 62.1
 - D. ASHRAE Standard 189.1

6. Using drought-tolerant native or adapted plants along with rocks, bark mulch, and other landscape elements is called
 - A. Weatherizing
 - B. Xeriscaping
 - C. Naturalizing
 - D. Hydrological

7. A Lawrence Berkeley National Laboratory study found that commissioning for new construction had a median payback of
 - A. 1.7 years
 - B. 3.2 years
 - C. 4.8 years
 - D. 6.4 years

8. A LEED project can reduce the amount of water needed for landscape irrigation by
 - A. Installing sprinklers to cover the entire project.
 - B. Bioswales.
 - C. having compacted soil.
 - D. increasing the use of native plants.

9. 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 from the project to a nearby transit location
 - C. Provide additional parking lot spaces
 - D. Use of a public nature trail that connects the building to surrounding buildings on the site

10. If a project achieves 73 points, what level of certification do they earn?
 - A. Certified
 - B. Silver
 - C. Gold
 - D. Platinum

11. Which of these is a LEED for Building Design and Construction minimum program requirement (MPR)?
 - A. Must be constructed in a permanent location
 - B. Project must be built in a LEED for Neighborhood Development location
 - C. Must have a minimum number of parking locations
 - D. Must not exceed the maximum size requirement

12. The LEED certification process for all projects begins by
 - A. hiring a LEED AP.
 - B. submitting design documents.
 - C. registering.
 - D. purchasing a reference guide.

13. What are the units for water use by water closets?
 - A. Gallons (liters) per flush
 - B. Gallons (liters) per person
 - C. Average time per usage
 - D. Average Daily use per person

14. Which of these is the best source of greywater for landscape irrigation?
 - A. Toilet
 - B. Urinal
 - C. Kitchen Sink
 - D. Bathroom sink

15. Which of these types of water are fit for humans to drink?
 - A. Blackwater
 - B. Greywater
 - C. Potable Water
 - D. Non-potable Water

16. Specifying the use of submeters for all building level water use and outdoor water use can help a project to do which of the following?
- A. Lower costs for electricity
 - B. Charge tenants more for water
 - C. Track water consumption and identify leaks
 - D. Improve fixture performance
17. Which of these strategies can help a project to control flooding?
- A. Increase imperviousness
 - B. minimize landscaped areas
 - C. Vegetated Roof
 - D. Increase hardscaped areas
18. A vegetated roof can help a project to
- A. reduce the heat island effect.
 - B. support Renewable energy Credits (RECs)
 - C. increase the amount of artificial turf used on the project site
 - D. maximize Green House Gas (GHG) emissions
19. What organization is responsible for determining the LEED impact categories?
- A. U.S. Green Building Council (USGBC)
 - B. Department of Energy (DOE)
 - C. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
 - D. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
20. Who can use the USGBC Member logo?
- A. USGBC members in good standing
 - B. LEED Accredited Professionals
 - C. LEED – certified projects
 - D. Projects registered for LEED-certification
21. Which of these strategies during design would help an owner to achieve their goal to reduce the negative impacts on indoor air quality?
- A. Reduce building ventilation rate
 - B. Maximize off-gassing
 - C. Specify nonnative plants
 - D. Specify low-emitting materials
22. Recyclable materials that building users store combined is called
- A. containment
 - B. landfill
 - C. waste audit
 - D. commingled waste

23. Which of these tools attempts to identify and quantify environmental effects throughout the life of materials, products, or buildings?
- A. Life-Cycle Evaluation (LCE)
 - B. Life-Cycle Costing (LCC)
 - C. Life-Cycle Development (LCD)
 - D. Life-Cycle Assessment (LCA)
24. Which of these does Life-Cycle Assessment help projects determine when selecting building materials or products?
- A. Cost
 - B. Recycled content
 - C. Environmental impacts
 - D. Site logistics
25. A building maintenance manager is purchasing a new boiler to replace an existing system. Although the first cost of one of the new boilers being considered is higher, when maintenance, fuel, and operating costs are included the payback over time shows the system to be the most cost effective. What tool is being used to help make the decision?
- A. Life-cycle costing
 - B. Life-cycle analysis
 - C. Performance Rating Method
 - D. Energy Cost Budget Analysis
26. Which of these is essential to the Integrated Project process?
- A. Working in isolation
 - B. View building systems as disconnected
 - C. Hiring a LEED AP
 - D. Setting clear sustainability goals and keeping the project on track to meet them
27. Which of these is essential to achieving a project's environmental and sustainability goals cost-effectively?
- A. Interpretive process
 - B. Open Design team
 - C. Integrative process
 - D. Collaboration
28. Which of these is a tradable commodity that is used to verify that a unit of electricity was generated from a renewable source?
- A. Energy Offset Credit (EOC)
 - B. Renewable Wind Certificate (RWC)
 - C. Renewable Energy Credit (REC)
 - D. Certificate of International Renewable (CIR)
29. Renewable electricity can be
- A. expensive to install
 - B. sent to the grid
 - C. unreliable for powering a building
 - D. difficult to install on a project.

30. Which of these could be an advantage to purchasing renewable energy for wholesale providers?
- A. Lower cost
 - B. Increases the building's energy demand
 - C. Reduces the building's energy demand
 - D. ?
31. 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
32. 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
33. 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
34. Which of these is a key component 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
35. Which of these would help a project team to outline procedures and goals for waste diversion during construction?
- A. Waste Audit
 - B. Construction Waste Management Policy
 - C. Storm Water Pollution Prevention Plan
 - D. Indoor Environmental Quality Plan
36. Which of the following permanent structures contributes to achieving LEED for Building Design and construction Material and Resources credits?
- A. Elevator
 - B. Framing
 - C. Process Equipment
 - D. Cooling Tower

37. A project team has obtained a door salvaged from another location. What Materials and Resource credit could this be used for?
- A. Recycled content
 - B. Construction Waste Management
 - C. Material reuse
 - D. FSC certification
38. Which of these is pollution from the production of power?
- A. CFC
 - B. HCFC
 - C. NH₃
 - D. Nitrogen Oxide
39. What refrigerant can be used by a LEED project?
- A. Halon
 - B. Hydropentachlorodimethyl (HPD)
 - C. Chlorofluorocarbons (CFC)
 - D. Hydrofluorocarbons (HFC)
40. What is the standard for thermal comfort for LEED projects?
- A. ASHRAE 55
 - B. ASHRAE 62
 - C. ASHRAE 90
 - D. ASHRAE 189
41. What building code adopted ASHRAE 189.1 as an equivalent code?
- A. ASHRAE 90.1
 - B. IGCC
 - C. California Title 24
 - D. SMACNA
42. What is the referenced standard LEED uses for modern energy code?
- A. ASHRAE 90.1
 - B. DOE Energy Portfolio Manager
 - C. ENERGY STAR
 - D. California Title 24
43. What is the LEED referenced standard for energy use in buildings?
- A. ASHRAE 55
 - B. ASHRAE 62.1
 - C. ASHRAE 90.1
 - D. ASHRAE 189.1
44. Water from a kitchen sink is considered black water unless
- A. it is used for toilets.
 - B. local code says otherwise.
 - C. it is used for irrigation.
 - D. It is captured and reused for building systems.

45. Which of these design strategies would help a project with providing occupant thermal comfort and earning points in the Indoor Environmental credit category?
- A. Desk lamp
 - B. Specifying operable windows
 - C. Provide a view to the outside
 - D. Creating a green cleaning policy
46. The perimeter of a building defines the
- A. Gross floor area
 - B. LEED boundary
 - C. project footprint
 - D. building footprint
47. The LEED boundary helps a project to
- A. establish project areas that can be disregarded in the credits
 - B. manage the area of project site disturbance
 - C. adjust the area based on the credit
 - D. earn more credits
48. What is the referenced standard for recycled material?
- A. ASTM Standard D6866
 - B. International Standards ISO 14021
 - C. ANSI 1256
 - D. California Federal Regulation Part 50. Section 40
49. What standard is used for the baseline calculation for the Water Efficiency Indoor Water Use Reduction credit?
- A. Energy Policy Act of 1992 (EPA 1992) and 2005
 - B. ASHRAE
 - C. DOE
 - D. Montreal Protocol
50. To determine the points for the Water Efficiency Indoor Water Use Reduction credit baseline is compared to
- A. other LEED buildings
 - B. similar buildings
 - C. calculate installed
 - D. national averages
51. When selecting a LEED project location which of these is the most important for the team to consider?
- A. Political climate
 - B. Economic forecast
 - C. Existing infrastructure
 - D. Ability to generate revenue

52. 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
53. What is an intense workshop designed to produce specific deliverables called?
- A. Charrette
 - B. Task meeting
 - C. Working group
 - D. Stakeholder meeting
54. Which of these is created by the U.S. Green Building Council (USGBC)?
- A. LEED User
 - B. Innovation
 - C. LEED rating system
 - D. Credential Maintenance Program (CMP)
55. A project site has been graded. What type of site would this be?
- A. Greenfield
 - B. Brownfield
 - C. Previously Developed
 - D. Previously Undeveloped
56. What is the purpose of the Regional Priority credit?
- A. To provide projects incentive to focus of local environmental issues
 - B. To allow substitutions for LEED prerequisites
 - C. To establish a minimum level of sustainability
 - D. To guarantee project certification
57. 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
58. An owner wants to LEED certify an existing office building and commit to on-going sustainability goals. Which rating system would you recommend?
- A. LEED for Interior Design and Construction
 - B. LEED for Building Design and Construction
 - C. LEED for Operations and Maintenance
 - D. LEED for Neighborhood Development

59. Who is the most responsible individual for the energy efficiency performance of a building on an on-going basis?
- A. LEED AP
 - B. Facility manager
 - C. Contractor
 - D. Commissioning Agent
60. 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
61. A project team has designed a project that captures rainwater, uses native plants, and evapotranspiration controllers. Which LEED credit would this help a project to earn?
- A. Water Efficiency Indoor Water Use Reduction
 - B. Water Efficiency Outdoor Water Use Reduction
 - C. Sustainable Sites Open Space
 - D. Sustainable Sites Protect or Restore Habitat
62. Which of these refers to the referenced standard Green Seal?
- A. Flooring and Cabinets
 - B. Carpets and carpet pads
 - C. Pest control
 - D. Custodial products and material
63. A project design team was unable to reduce the energy use in a building and meet the Owner's Project Requirements (OPR). Which of these strategies could help them to reduce the building's energy use and achieve the owner's goal?
- A. Schedule work hours to be flexible when it is extremely hot or cold outside
 - B. Increase Daylighting and window orientation
 - C. Use daylight as the only source of lighting in all private offices
 - D. Monitor outdoor airflow
64. Which of these can help to prevent light pollution?
- A. up-lighting
 - B. Shielded fixtures
 - C. Open-grid pavers
 - D. Native landscaping
65. When should a project team hire the Commissioning Agent (CXA)?
- A. Early in Schematic Design (SD)
 - B. After project close out
 - C. After all building systems have been installed and tested
 - D. After construction documents are submitted

66. Which of these can help a project to reduce the contaminants brought into a building?
- A. Install sensors at the entryways
 - B. Use carpet mats
 - C. Install grates, grilles, or mats at the main entrances
 - D. Have fewer building entrances
67. What is the best way to prevent indoor pollutants?
- A. Decrease the ventilation going to the building
 - B. control them at the source.
 - C. Keep pollutants out of the building
 - D. Locate air intakes near loading docks and idling vehicles
68. What system has the largest energy use in a commercial building?
- A. Lighting
 - B. Cooling
 - C. Space heating
 - D. Ventilation
69. According to the Indoor Environmental Quality (EQ) credit category which of these is considered an unoccupied space?
- A. Electrical and Mechanical Rooms
 - B. Restrooms
 - C. Break Rooms
 - D. Corridors
70. Volatile Organic Compounds (VOCs) affect which of these entities?
- A. Occupant survey outcomes
 - B. ?
 - C. Indoor Air Quality
 - D. ?
71. Which of these strategies would help with reducing the heat island effect and surrounding air temperature?
- A. Increase hardscape
 - B. Dark colored pavers
 - C. Low Albedo pavers
 - D. Highly reflective roof
72. Using native plants on a project site can help to
- A. Reduce energy demand
 - B. meet the low emitting materials credit requirements
 - C. protect and restore habitat
 - D. increase heat island effect
73. 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

74. What is the reason for the LEED impact categories?
- A. To speed up the certification process
 - B. To clearly define the vision of LEED and help projects to focus on their goals
 - C. To help projects achieve LEED certification
 - D. To provide teams with a responsibility matrix
75. What is land which may be complicated by the presence or possible presence of a hazardous substance, pollutant, or contaminant called?
- A. Greenfield
 - B. Infill
 - C. Brownfield
 - D. Previously Developed
76. Which LEED rating system allows project teams to adjust the credit requirements based on the project's square footage?
- A. LEED for Homes
 - B. LEED for Building Design and Construction
 - C. LEED for Interior Design and Construction
 - D. LEED for Neighborhood Development
77. Besides air temperature and air speed what other factor of human thermal comfort can buildings control?
- A. Metabolism
 - B. Clothing
 - C. Sunlight
 - D. Humidity
78. Which of these are the most important LEED impact categories?
- A. Reduce Climate Change, support a Green Economy, Reduce Potable Water Use
 - B. Reduce Climate Change, Support a Green Economy, Provide Alternative Transportation
 - C. Reduce Climate Change, Protect Human Health, Support a Green Economy
 - D. Return on Investment, Protect Human Health, Support a Green Economy
79. A project team has developed a site with no hardscape and a large permeable area. Which of these LEED credits would this design help the project to earn?
- A. Thermal Comfort
 - B. Low Emitting Materials
 - C. Light Pollution Reduction
 - D. Rainwater Management
80. Which of these strategies could help a project to earn points in the Location and Transportation credit category?
- A. Use native plants
 - B. Cover the parking area
 - C. Install Electric Vehicle Charging Stations
 - D. Install a building level water meter

81. Which of these is used for documenting the Materials and Resources Construction Waste Management credit?
- A. Volume of recycled content in waste material
 - B. Weight of waste material created and diverted from landfill
 - C. Material purchasing plan
 - D. Location of landfill
82. What must the project team do to earn the Integrative Process credit?
- A. Analyze synergies among the systems and components
 - B. Use the lowest cost products
 - C. Source all materials locally
 - D. Include at least two engineers on the project team
83. Materials given the most importance in the LEED rating system are
- A. less expensive and easily attainable.
 - B. extracted, harvested, purchased locally.
 - C. more attractive and installed quickly.
 - D. sourced from multiple locations across the country.
84. Purchasing lumber from a Forest Stewardship Certified (FSC) supplier ensures that it came from a
- A. local vendor.
 - B. an ethical distributor.
 - C. responsible forest manager.
 - D. biodiverse environment.
85. Which of these is required of all LEED projects?
- A. Project team must hire a LEED AP
 - B. Project must be constructed and operated on a permanent location on existing land
 - C. Project team must have at least two project managers in addition to the owner
 - D. Project must be located in an urban area with infrastructure
86. Which of these strategies could help a project to reduce the total potable indoor water use?
- A. Dual-flush toilets
 - B. Limit restroom access
 - C. Install fewer Lav faucets
 - D. Collect rainwater for plant irrigation
87. Which of these renewable energy sources could help a project to reduce their energy use?
- A. Solar Hot Water Heater
 - B. Incineration of building waste
 - C. Passive solar
 - D. Daylighting
88. Which of these meets the requirement for purchasing green power for LEED projects?
- A. Green-e Power Providers
 - B. Eco-Friendly Certified Electricity
 - C. Only electricity purchased from Local Utility Providers
 - D. Electricity purchased at a premium price

89. Which of these is considered a renewable energy source?
- A. Natural Gas
 - B. Nuclear
 - C. Biomass
 - D. Coal
90. What is the intent of the LEED Energy and Atmosphere Demand Response credit?
- A. Lower the cost for electricity in the summer
 - B. Reduce strain on the grid
 - C. Increase CO₂ Emissions
 - D. Create an unstable electricity supply
91. Which of these must all LEED projects complete?
- A. MPRs
 - B. CIR
 - C. All credits and seven prerequisites
 - D. Satisfy only the prerequisites that apply to their project
92. What type of meeting brings together the project team with stakeholders and outside experts as needed for creative thinking and collaboration?
- A. Stakeholder meeting
 - B. Small task group
 - C. Charrette
 - D. Team meeting
93. Which of these can be used to verify the location of services?
- A. Aerial color photo
 - B. Site plan
 - C. Phone Book
 - D. Map of area showing locations
94. Who completes and signs the LEED credit template?
- A. LEED AP
 - B. Assigned Team Member
 - C. Contractor
 - D. USGBC Employee
95. Which of these would be the best site to locate a LEED project?
- A. Greenfield
 - B. Access to Public Transit
 - C. Nearby to a large parking garage
 - D. Close to a USGBC Chapter Office

