

November 5, 2018

1. What percentage of the earth's water is fresh water?
  - A. 1%
  - B. 3%
  - C. 5%
  - D. 10%
  
2. Which of these is recommended that LEED applicants follow as a series of steps to certification?
  - A. Charette
  - B. Integrative Process
  - C. Basis of Design (BOD)
  - D. LEED Work Plan
  
3. What is the LEED standard for Water Efficiency credits for Indoor Water Use Reduction calculations?
  - A. EPAAct 1992, 2005
  - B. WaterSense
  - C. ENERGY STAR
  - D. ASHRAE
  
4. Which of these can help a project to reduce the contaminants brought into a building at the entrances?
  - A. underfloor air distribution
  - B. carpet mats
  - C. grates, grilles, or mats
  - D. fewer building entrances
  
5. How is lighting power density (LPD) measured?
  - A. Lighting power per area
  - B. Watts per hour
  - C. Lumens
  - D. Illuminance per square foot
  
6. 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
  
7. What LEED rating system focuses on the where, what, and how to build green at a community scale?
  - A. LEED BD+C: Retail
  - B. LEED BD+C: Schools
  - C. LEED BD+C: New Construction
  - D. LEED for Neighborhood Development

8. An owner wants to use a LEED rating system that would allow for the project to commit to on-going sustainability. What rating system would you recommend?
  - A. LEED for New Construction
  - B. LEED for Operations and Maintenance
  - C. LEED for Homes
  - D. LEED for Interior Design and Construction
  
9. A nonprofit is renovating 3 floors of a 15-floor commercial office building owned by a management firm. What rating system would be appropriate for the project?
  - A. LEED ID+C: Commercial Interiors
  - B. LEED BD+C: New Construction and Major Renovations
  - C. LEED O+M: Retail
  - D. LEED BD+C: Retail
  
10. Which of the integrative process phases that can be thought of as an extensive expansion of what is conventionally called predesign is the most important?
  - A. Design and Construction
  - B. Implementation
  - C. Occupancy, operations, and performance feedback
  - D. Discovery
  
11. 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
  
12. What international treaty banned the use of CFCs and is phasing out the use of HCFCs?
  - A. Kyoto Protocol
  - B. Montreal Protocol
  - C. ASHRAE
  - D. SMACNA
  
13. What refrigerant can be used by a LEED project?
  - A. Halon
  - B. Hydropentachlorodimethyl (HPD)
  - C. Chlorofluorocarbons (CFC)
  - D. Hydrofluorocarbons (HFC)
  
14. What system has the largest energy use in a commercial building?
  - A. Lighting
  - B. Cooling
  - C. Space heating
  - D. Ventilation

15. What percentage of irrigation system water must be sub metered for the Water Efficiency credit Advanced Water Metering?
- A. 50%
  - B. 100%
  - C. 80%
  - D. 25%
16. When selecting a location, which of these should a team consider?
- A. Economy
  - B. Political climate
  - C. Existing infrastructure
  - D. Access to fast food
17. Which of these could be used to encourage pedestrian access to a project site?
- A. 1/8-mi nature trail to an urban area
  - B. Shuttle from a transit station to the site
  - C. Parking spaces close to the building
  - D. Increase the number of bike racks
18. The acronym MERV stands for:
- A. Minimum Efficiency Reporting Value
  - B. Minimum Efficiency Recording Value
  - C. Maximum Efficiency Reporting Value
  - D. Maximum Efficiency Recording Value
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20. Which of these is a standard reference by the LEED rating systems?
- A. American Association of Architects (AIA)
  - B. Mechanical Contractors Association (MCA)
  - C. National Electric Code (NEC)
  - D. International Organization for Standardization (ISO)
21. 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
22. 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)

23. What is a benefit of the Materials and Resources Credit Construction and Demolition Waste Management Planning?
- A. Projects can earn money for recycling cans and bottle
  - B. Increased employee productivity
  - C. Reduces the need for landfills
  - D. Can reduce project cost
24. Which of the following is a type of graywater?
- A. Rainwater collected in a retention pond
  - B. Wastewater that has not come in contact with toilet waste or kitchen sinks
  - C. Rainwater collected and held in a cistern
  - D. Wastewater from urinals
25. Studies by the Heschong Mahone Group have demonstrated that providing daylighting in classrooms can improve student scores by what percentage?
- A. 2% to 5%
  - B. 7% to 18%
  - C. 25% to 33%
  - D. 40% to 50%
26. A Lawrence Berkeley National Laboratory study found that commissioning for new construction has a median payback time of how many years?
- A. 1.7
  - B. 3.6
  - C. 4.8
  - D. 10
27. 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
28. 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
29. 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

30. 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
31. Besides humidity and air temperature, what else in the list is a consideration for human thermal comfort?
- A. Sunlight
  - B. Desk lamp
  - C. Air speed
  - D. Diffuser
32. Besides air temperature and air speed what other factor of human thermal comfort can buildings control?
- A. Metabolism
  - B. Clothing
  - C. Sunlight
  - D. Humidity
33. 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
34. Which of these refers to the referenced standard Green Seal?
- A. Lumber
  - B. Pest Management
  - C. Carbon Dioxide Sensors
  - D. Custodial products and equipment
35. Which of these can be used as a renewable energy source?
- A. Clean Coal
  - B. Nuclear
  - C. Methane gas from a landfill
  - D. Natural gas from fracking hard rock
36. 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

37. The Commissioning Authority (CXA) reports directly to the
- A. LEED AP
  - B. Contractor
  - C. Sub-Contractor
  - D. Owner
38. Which of these is an approach to land management that mimic natural hydrology? [Choose two]
- A. Zero lot line
  - B. Infill Development
  - C. Low-Impact Development
  - D. Green Infrastructure
39. Which of these is a strategy to increase pedestrian connectivity for neighborhoods?
- A. Decrease street-grid patterns
  - B. Place buildings at the corner of the street
  - C. Limit the use of cul-de-sacs
  - D. Place parking lots away from the building to reduce traffic
40. A project team has achieved significant, measurable environmental performance using a strategy not addressed in the LEED green building rating system. What should they do?
- A. Apply for an Innovation (IN) Credit
  - B. Submit the strategy to the LEEDuser forum
  - C. Nothing
  - D. Complete the credit's feedback survey
41. Which of these systems uses process water? [Choose two]
- A. Boilers
  - B. Industrial processes
  - C. Building Systems
  - D. Janitor Sinks
42. What is the referenced standard for EQ Credit Thermal Comfort?
- A. ASHRAE 55-2010
  - B. ASHRAE 90.1 – 2010
  - C. ASHRAE 52.2 – 2010
  - D. ASHRAE 62.1 – 2010
43. Which of these is a cost-effective strategy for an existing building, if porcelain replacement proves cost-prohibitive to achieve water savings?
- A. Install sensors
  - B. Aerators
  - C. Install new flush valves or flow restrictors
  - D. Limit access
44. What should a project do to help with achieving EQ Credit Construction Indoor Air Quality Management Plan?
- A. Store moisture absorptive material on a slab
  - B. Store material in the mechanical room
  - C. Keep the job site clean
  - D. Run the ventilation system with permanently installed filters

45. What needs to be signed to grant actual authority by the owner to allow a team member to register the project and accept the certification agreement?
- A. Agent's Authority Form
  - B. LEED Agreement Form
  - C. MPR
  - D. Project Scorecard
46. Which of these is the most important LEED Impact Category?
- A. Biodiversity
  - B. Profit
  - C. Restore Water Resources
  - D. Climate Change
47. How many points are needed to earn LEED Certified?
- A. 30-39
  - B. 40-49
  - C. 50-59
  - D. 60-69
48. Which of these is the correct way to refer to a building that has achieved LEED certification?
- A. LEED-certified
  - B. LEEDS Certified
  - C. LEED for New Construction certified
  - D. LEED Certified certified
49. What LEED credential is awarded to an individual for having at least ten years of experience?
- A. LEED Fellow
  - B. Green Rater
  - C. LEED AP
  - D. LEEDS AP
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  - B. Clothing
  - C. Sunlight
  - D. Humidity
52. What is the purpose of the WaterSense label for building fixtures and fittings?
- A. Guarantee that the Water Efficiency prerequisite will be achieved
  - B. Help design team to select fixtures that meet the EPA Act
  - C. Ensure that fixtures are water efficient and high performing
  - D. Helps the project team determine the total process water consumption for the building

53. What is the LEED referenced standard for providing adequate ventilation to a building?
- A. SMACNA
  - B. ASHRAE 90.1
  - C. ASHRAE 62.1
  - D. ISO
54. Who signs the LEED credit template?
- A. LEED AP
  - B. Project Manager
  - C. Responsible Team Member
  - D. Contractor
55. What does renewable electricity refer to?
- A. Eco-friendly electricity
  - B. Indirect greenhouse gas emissions associated with the generation of purchased electricity
  - C. Grid electricity
  - D. Energy from residential windmills
56. Besides responsible forest management what else does the Forest Stewardship Council (FSC) do?
- A. Limits timber production
  - B. Protect, enhance and restore biodiversity
  - C. Recycles planer shavings
  - D. Purchases old growth forests
57. What building code adopted ASHRAE 189.1 as an equivalent code?
- A. ASHRAE 90.1
  - B. IGCC
  - C. California Title 24
  - D. SMACNA
58. Over time, if not mitigated building resource use
- A. Increases
  - B. Decreases
  - C. Stays about the same
  - D. Can't be determined
59. 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
60. Which of these is the best site for a LEED project to build on?
- A. Floodplain
  - B. Habitat
  - C. Brownfield
  - D. Prime Farmland

61. What is used to determine a project's Regional Priority credits?
- A. Longitude and Latitude
  - B. Area code
  - C. Project size
  - D. LEED Taskforce
62. Where can you find the Regional Priority credits that apply to the project?
- A. LEED Reference Guide
  - B. LEED Online
  - C. USGBC Web Site
  - D. Project Scorecard
63. Which of these building systems uses CFCs?
- A. Centrifugal chiller
  - B. Roof hatch
  - C. Boiler
  - D. Exhaust fan
64. What is the intent of the Water Efficiency Credit Category?
- A. Reduce site landscaping features
  - B. Protect habitat
  - C. Minimize electricity use for water treatment and pumping
  - D. Conserve earth's potable water
65. What organization allows you to continually monitor energy efficiency?
- A. ENERGY STAR
  - B. US Department of Energy
  - C. US Department of Energy, Energy IQ
  - D. SMACNA
66. What activity is performed to test desired building energy usage to actual?
- A. Sub-Metering
  - B. Commissioning (CX)
  - C. Simple Box
  - D. Discovery
67. You are the contractor on a new commercial building, what did EPA Act of 1992 address? [Chose three]
- A. Showerheads
  - B. Janitor Sinks
  - C. Mop Sinks
  - D. Water Closets
  - E. Urinals
68. What should be located in the core of the building for daylighting purposes? [Chose three]
- A. Private Offices
  - B. Meeting Rooms
  - C. Equipment Rooms
  - D. Locker Rooms
  - E. Utility Storage Closets

69. If a project earns 6 of 8 prerequisites and 56 points, what level of certification would they obtain?
- A. Certified
  - B. Silver
  - C. Gold
  - D. None
70. What can a project use to calculate expected water consumption?
- A. Building size and occupancy type
  - B. Number of employees and types of fixtures installed
  - C. Location and occupancy type
  - D. Building size and types of fixtures installed
71. What can be done to achieve a point in the credit category Location and Transportation?
- A. Shade large parking lot with solar panels
  - B. Subsidize carpooling
  - C. Use an existing building with a large parking lot
  - D. Provide Open Space
72. What credit categories do ASHRAE Standards address?
- A. Indoor Environmental Quality and Energy and Atmosphere
  - B. Water Efficiency and Materials and Resources
  - C. Indoor Environmental Quality and Water Protection
  - D. Sensitive Lands and Water Efficiency
73. Which of these is pollution from the production of electricity?
- A. CFC
  - B. HCFC
  - C. NH<sub>3</sub>
  - D. Nitrogen Oxide
74. 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
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76. What is at the core of the integrative process?
- A. Working toward individual goals
  - B. Upfront cost-based decision making
  - C. Collaborative team members
  - D. Linear planning

77. Which of these is a natural refrigerant?
- A. Ammonia (NH<sub>3</sub>)
  - B. HFC-134A
  - C. CFC-11
  - D. HCFC-123
78. Besides protect, enhance and restore biodiversity what else does the Forest Stewardship Council (FSC) do?
- A. Limits timber production
  - B. Responsible forest management
  - C. Recycles planer shavings
  - D. Purchases old growth forests
79. An outcome of the Heat Island Effect is
- A. Increased air-conditioning demand in the summer
  - B. Reduced air-conditioning demand in the winter
  - C. Reduced carbon emissions due to increased energy demand
  - D. Fewer roads are built
80. What intense workshop is used to establish green building goals across all aspects of the building design, drawing on the expertise of all participants?
- A. Technical Advisory Group meeting
  - B. Facility manager meeting
  - C. Charrette
  - D. LEED roundtable
81. Treated rainwater that has had its suspended solids removed affects what environmental aspect?
- A. Erosion
  - B. Airborne dust
  - C. Water pollution
  - D. Climate change
82. Why is stormwater becoming more contaminated?
- A. Acid rain
  - B. Expanding impervious surfaces
  - C. Increased runoff
  - D. Increase in retention ponds
83. A project site has been graded. What type of site would this be?
- A. Greenfield
  - B. Brownfield
  - C. Previously Developed
  - D. Previously Undeveloped
84. Rainwater could be used to supplement potable water for which of these?
- A. Irrigation
  - B. Drinking faucets
  - C. Swimming Pools
  - D. Dishwashers

85. How many points are required to earn LEED Gold certification?

- A. 40-49
- B. 50-59
- C. 60-79
- D. 80+