

LEED Green Associate – Practice Exam #3  
May 19, 2016

1. Which of these is the best site to build on?
  - A. Floodplain
  - B. Habitat
  - C. Brownfield
  - D. Farmland
  
2. What is the LEED standard for Water Efficiency credits for Indoor Water Use Reduction calculations?
  - A. WaterSense
  - B. EPAAct 1992, 2005
  - C. ENERGY STAR
  - D. ASHRAE
  
3. What is the LEED standard for minimum Indoor Air Quality performance?
  - A. ASHRAE 90.1
  - B. ASHRAE 189.1
  - C. ASHRAE 62.1
  - D. SMACNA
  
4. What is the LEED standard for ventilation rate?
  - A. ASHRAE 90.1
  - B. ASHRAE 189.1
  - C. ASHRAE 62.1
  - D. ASHRAE 55
  
5. What is the LEED standard for the baseline building energy performance?
  - A. ASHRAE 90.1
  - B. ASHRAE 189.1
  - C. ASHRAE 62.1
  - D. ASHRAE 55
  
6. What refrigerant is being phased out by 2015?
  - A. CFC
  - B. HFC
  - C. HCFC
  - D. Propane
  
7. The Montreal Protocol phased out which of these refrigerants?
  - A. CFC
  - B. HFC
  - C. HCFC
  - D. Propane

8. Specifying high efficiency windows may allow projects to save on what else?
  - A. Roofing Material
  - B. HVAC System
  - C. Plumbing Fixtures
  - D. Lighting
  
9. 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. 3.2
  - C. 4.8
  - D. 6.4
  
10. A University of California–Berkeley study found that, on average, certified green office buildings rented for what percentage more than comparable nearby buildings?
  - A. 2%
  - B. 5%
  - C. 8%
  - D. 15%
  
11. Which of these is the best source of greywater for landscape irrigation?
  - A. Toilet
  - B. Kitchen Sink
  - C. Bathroom sink
  - D. Cooling Tower Blowdown
  
12. LEED Online can be used to
  - A. Manage the entire LEED certification process
  - B. Purchase LEED reference guides
  - C. Register for LEED exams
  - D. Contact LEED customer service representatives
  
13. Which of these is an acceptable reference for a LEED project that has achieved certification?
  - A. LEED-certified
  - B. LEED for New Construction certified
  - C. LEED for Commercial Interiors v2.0 certified
  - D. LEED Certified certified
  
14. A project owner wants to evaluate the cost and performance of an HVAC system. Which of these tools should the team use?
  - A. Life-Cycle Analysis (LCA)
  - B. Life-Cycle Costing (LCC)
  - C. Life-Cycle Evaluation (LCE)
  - D. Life-Cycle Development (LCD)

15. A project owner wants to evaluate the environmental effects associated with choosing locally sourced gypsum board. Which of these tools should the team use?
- A. Life-Cycle Analysis (LCA)
  - B. Life-Cycle Costing (LCC)
  - C. Life-Cycle Evaluation (LCE)
  - D. Life-Cycle Development (LCD)
16. Which of these tools could help a project team in increasing building performance and reducing costs?
- A. Design build process
  - B. Integrative process
  - C. Interdependent process
  - D. Iterative process
17. Which LEED category is Daylight earned?
- A. Indoor Environmental Quality (EQ)
  - B. Innovation (IN)
  - C. Energy & Atmosphere (EA)
  - D. Sustainable Sites (SS)
18. Which of these is a credit in the LEED Indoor Environmental Quality category?
- A. Quality Lighting
  - B. Design for Flexibility
  - C. Daylight
  - D. Innovation
19. Which of these should be a fully closed system?
- A. Climate Change
  - B. Greener Economy
  - C. Materials
  - D. Human Health
20. 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
21. Who is most directly responsible for the Control association factor in the LEED Impact categories?
- A. Transients, students
  - B. Students, visitors
  - C. Architect, engineers
  - D. Owner, occupants
22. Which of these is a LEED impact category used to determine the sustainability of a project?
- A. Return on Investment; Human health; Biodiversity
  - B. Climate Change; Human health; Business Efficiency
  - C. Climate change; Human health; greener economy
  - D. Return on Investment; Climate Change; Biodiversity

23. Which of these strategies could improve occupants' comfort and control?
- A. Prohibit smoking
  - B. Operable windows
  - C. Entryway systems
  - D. Carbon dioxide monitors
24. Which of these strategies could be used to assess occupant's satisfaction with the indoor environment?
- A. Wait for the building occupants to complain
  - B. Track absenteeism
  - C. Conduct occupant surveys
  - D. Measure productivity
25. Which of these could help a project to reduce water use?
- A. Native plants, fixture sensors, waterless urinals
  - B. Native plants, aerators, dual-flush toilets
  - C. Shrubs, faucet metering controls, composting toilets
  - D. Turf grass, aerators, low-flow toilets
26. Which of these could be used to encourage pedestrian access to a project site?
- A. Access to a nature trail
  - B. Shuttle from a transit station to the site
  - C. Parking spaces close to the building
  - D. Increase the number of bike racks
27. Which of these refrigerants can a LEED project use?
- A. CFC
  - B. HCFC
  - C. HFC
  - D. FHC
28. Which of these could help a project to earn Location and Transportation credits?
- A. Parking lots on neighboring sites are available to the building users
  - B. Building occupants can walk to nearby shops and restaurants
  - C. There is an airport within two-miles of the project site
  - D. Off-street parking is available to the building users
29. Which of these building systems can be used in the calculation for the materials and resources credits?
- A. Framing
  - B. Elevators
  - C. Fire Suppression
  - D. Escalators
30. Which potent greenhouse gas is due to building waste being sent to landfills?
- A. Carbon Dioxide
  - B. Sulfur Dioxide
  - C. Radon
  - D. Methane

31. How must projects track the quantity of construction waste generated by the project?
- A. Weight only
  - B. Volume only
  - C. Cubic feet
  - D. Weight or volume but must be consistent
32. Which of these is an environmental impact due to construction pollution?
- A. Heat island Effect
  - B. Air borne dust
  - C. Eutrophication
  - D. Light pollution
33. What must the project team do to earn the Integrative Process credit?
- A. Analyze synergies
  - B. Use the lowest cost products
  - C. Source all materials locally
  - D. Include at least two engineers on the project team
34. What is an intense workshop generally held in the beginning of a project that is designed to produce specific deliverables called?
- A. Stakeholder meeting
  - B. Small task group
  - C. Team meeting
  - D. Charrette
35. What type of meeting brings together the project team with stakeholders and outside experts as needed for creative thinking and collaboration?
- A. Charrette
  - B. Stakeholder meeting
  - C. Small task group
  - D. Team meeting
36. Which of these would be a good design strategy for a homeowner?
- A. Use black water for irrigating
  - B. Use greywater for landscaping
  - C. Use greywater for swimming pool
  - D. Use greywater for washing clothes
37. What is the thermal absorption by hardscape, such as dark, non-reflective pavement and buildings, and its subsequent radiation to surrounding areas called?
- A. Thermal Emittance
  - B. Conductivity Effect
  - C. Heat Island Effect
  - D. Solar Reflectance

38. Which of these most significantly contributes to surface water pollution?
- A. Increase in impervious surfaces
  - B. Increase in pervious surfaces
  - C. Using open grid pavers instead of concrete
  - D. Decrease in impervious surfaces
39. Green power is
- A. Expensive
  - B. Not available in many places
  - C. Typically purchased at a premium
  - D. Only produced by building installed solar panels
40. The purpose of Renewable Energy Certificates is to
- A. Encourage new renewable energy facilities
  - B. Reduce Heat Island Effect
  - C. Increase demand for energy
  - D. Compete with solar energy providers
41. For an average office building in the United States, what percentage more energy is expended by office workers commuting to and from the building than is consumed by the building itself for heating, cooling, lighting, and other energy uses.
- A. 15%
  - B. 30%
  - C. 150%
  - D. 200%
- [Even for an office building built to modern energy codes (ASHRAE 90.1–2010), more than twice as much energy is used by commuters than by the building.]
42. Compared to conventional buildings, green buildings
- A. Are more expensive to build
  - B. Are more expensive to operate
  - C. Use less energy
  - D. Use more energy
43. 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
44. 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

45. Which of these is a design strategy for reducing energy demand?
- A. Passive ventilation
  - B. Install solar photovoltaic panels
  - C. Create incentives for occupants
  - D. Monitor outdoor airflow
46. How many points must a project earn to be LEED Gold?
- A. 40-49 points
  - B. 50-59 points
  - C. 60-79 points
  - D. 80+ points
47. 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
48. What is the purpose of LEED prerequisites?
- A. To guarantee a project will achieve LEED certification
  - B. To provide projects with optional strategies to pursue
  - C. To achieve a minimum level of sustainability
  - D. To help projects to gain points toward LEED certification
49. What is the LEED standard for Water Efficiency credits for Indoor Water Use Reduction calculations?
- A. WaterSense
  - B. EPA Act 1992, 2005
  - C. ENERGY STAR
  - D. ASHRAE
50. A non-profit organization is planning to rent three floors of an existing 15-story building. What LEED rating system would you recommend to the project team to follow?
- A. LEED BD+C: New Construction
  - B. LEED ID+C: Commercial Interiors
  - C. LEED O+M: Existing Buildings
  - D. LEED BD+C: Retail
51. 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
52. An owner wants to LEED certify an existing building and commit to on-going sustainability goals. Which rating system would you recommend?
- A. LEED ID+C: Commercial Interiors
  - B. LEED BD+C: New Construction and Major Renovation
  - C. LEED O+M: Existing Buildings
  - D. LEED ND: Plan

53. What does a project need to do to be LEED Certified?
- A. Earn all prerequisites and 30 points
  - B. Earn all prerequisites and 40 points
  - C. Earn some prerequisites and 30 points
  - D. Earn some prerequisites and 40 points
54. Which of these meets the smart growth development approach?
- A. Senior living, jobs, shops, public transportation
  - B. Commercial building, gated community, senior retirement home, parks
  - C. Restaurants, grocery stores, movie theaters, museums
  - D. Parks, nature trails, sprawl, senior living
55. Which of these can help to improve connectivity?
- A. Larger block sizes
  - B. Gated communities
  - C. Reduced intersection density
  - D. Smaller block sizes
56. Compact communities help to
- A. Reduce transportation needed to access services
  - B. Encourage suburban sprawl
  - C. Limit the number of services available
  - D. decrease transit use
57. Which of these is a strategy to improve circulation
- A. Limit culs-de-sacs
  - B. Larger block sizes
  - C. One way streets
  - D. Provide on-street parking
58. Which of these would help to encourage building users to use alternative transportation?
- A. Shuttles from ride share parking lots
  - B. Increase transit fares
  - C. Bicycle racks and changing facilities
  - D. Tree-lined streets
59. Which of these is a conventional nonrenewable energy source?
- A. Biomass
  - B. Geothermal
  - C. Hydropower
  - D. Fossil and nuclear fuels
60. Which of these is a strategy for meeting energy demand with renewable energy?
- A. Ground source heat pump
  - B. Solar hot water heater
  - C. Burning municipal trash
  - D. Natural gas heater

61. Which of these is a strategy for keeping an existing building on track for meeting or exceeding the original operational goals?
- A. ENERGY STAR
  - B. Retrocommissioning
  - C. Commissioning
  - D. Adaptive Reuse
62. Which of these is an example of a preferable material?
- A. Stone extracted 500 miles from the project
  - B. Carpet with a short warranty period
  - C. Locally-sourced hard wood flooring
  - D. Plywood shipped from overseas
63. Which of these must be met for a product to qualify for an MR credit location valuation factor?
- A. Extracted, manufactured, and purchased locally
  - B. Manufactured within a 100-mile radius of the project site
  - C. Extracted, manufactured, and purchased within 500 miles of the project
  - D. Extracted and built locally
64. In which credit category can a project earn a point for having a LEED AP on the project team?
- A. Regional Priority (RP)
  - B. Innovation (IN)
  - C. Sustainable Sites (SS)
  - D. Water Efficiency (WE)
65. Best strategy for reducing outdoor water use for landscaping
- A. Plant turf grass
  - B. Sprinklers
  - C. Low flow toilets
  - D. Drip irrigation
66. Which of these is a strategy for reducing the Heat Island Effect?
- A. Open-grid pavers
  - B. Concrete walkways
  - C. Shielded fixtures
  - D. Decrease roof area
67. Which of these is a key indicator of the impact factor Enhance Individual Human Health and Well-Being?
- A. Support Occupant Comfort and Well-Being
  - B. Sustainable Use and Management of Ecosystem Services
  - C. Support Local Economies
  - D. Create a Strong Sense of Place
68. When choosing sustainable custodial products and materials what standard must be met?
- A. SMACNA
  - B. EPAct
  - C. Green Guard
  - D. Green Seal

69. Which of these is a source of black water?
- A. Showerheads
  - B. Lav Faucets
  - C. Toilets and urinal
  - D. Washing machines
70. Which of this could be used to help reduce the building's demand for potable water?
- A. Black water for landscaping
  - B. Graywater for swimming pools
  - C. Greywater for cooling towers
  - D. Stream water for flushing toilets
71. What organization is responsible for developing the LEED Rating System?
- A. GBCI
  - B. ASHRAE
  - C. EPA
  - D. USGBC
72. What is pre-consumer recycled material?
- A. Used office paper
  - B. waste generated by households
  - C. Material diverted from the waste stream during the manufacturing process
  - D. Plastic water bottles
73. Who can use the USGBC member logo?
- A. LEED-certified projects
  - B. Members in active standing
  - C. Anyone that has passed a LEED exam
  - D. Anyone interested in green building
74. What is a site that has been graded known as?
- A. Greenfield
  - B. Brownfield
  - C. Previously developed site
  - D. Previously disturbed
75. Collecting, storing, marketing used materials is called?
- A. Retro commissioning
  - B. Adaptive reuse
  - C. Processing
  - D. Recycling
76. What is it called when a total air volume of outdoor air per square foot of gross floor area is supplied to the interior of a building?
- A. Flush-out
  - B. Bake-out
  - C. Ventilation
  - D. Aerating

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. The triple bottom line addresses both social capital and natural capital. What other concept does the triple bottom line incorporate?
- A. Private capital
  - B. Local Capital
  - C. Economic capital
  - D. Business capital
79. What is the standard for the minimum efficiency reporting value (MERV) rating for filters?
- A. ASHRAE 52
  - B. SMACNA
  - C. EPAct
  - D. ASHRAE 90.1
80. Who developed the LEED Impact Categories?
- A. U.S. Green Building Council (USGBC)
  - B. United States 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)
81. According to the LEED Core Concepts Guide what is the largest energy use in a commercial building?
- A. Lighting
  - B. Heating
  - C. Cooling
  - D. Computers
82. Which of these could help to promote sustainable and regenerative material resource cycles?
- A. Build more landfills
  - B. Conduct a waste audit
  - C. Collect waste hauler reports
  - D. Prepare a material reuse plan
83. What is the first step in the iterative process?
- A. Set Goals
  - B. Establish metrics
  - C. Hire a LEED AP
  - D. Hold a Charrette
84. Which of these is a principle concept of the integrative process?
- A. Positive feedback
  - B. Closed loops
  - C. Systems thinking
  - D. Negative feedback

85. Green power is
- A. sent to the grid
  - B. expensive to purchase
  - C. not available in most cities
  - D. generated on a project site and sold to a local utility company