



LEED v4 Green Associate Free Practice Exam

What Makes This Practice Exam Different

This LEED Green Associate v4 Practice Exam was originally developed in conjunction with GreenStep's in-person and online LEED Exam Training Workshops. Our exams have proven to be effective tools for over 10,000 GreenStep workshop participants. We created stand-alone versions of our practice exams in response to the many requests we receive from LEED Green Associate candidates who are unable to attend one of our workshops. They are all searching for the practice exam that will best prepare them to pass the LEED exam.

From our perspective, many of the exam prep resources currently on the market are borne from the idea that quantity is king. Their selling point is that if you simply take 700 practice questions, memorize 1,000 flash cards, and read through their "condensed" 250-page study guide, you will eventually pass the LEED exam.

It is our experience that the large majority of our workshop participants have a limited amount of time, energy and brainpower to devote to studying for the exam. You can't afford to waste valuable time memorizing information that will not be covered on the test. You need something that is as condensed and as accurate as possible.

Our practice exams and related materials were developed using a different approach. We believe that quality is much more important than quantity when preparing for the LEED exam. In the development of our practice exams, our team scoured every possible resource for potential exam questions, tested and passed several versions of the LEED exam multiple times, and incorporated valuable feedback from hundreds of past participants from over 300 LEED exam training workshops. The result is a collection of practice exams that very accurately reflect the content and style of questions that you will see on the LEED Green Associate exam.

The Green Building Certification Institute (GBCI) developed the LEED Green Associate exam "for professionals who want to demonstrate basic knowledge of green design, construction and operations in non-technical fields of practice." In reality, many questions on the exam can be extremely specific and unrelated to the industry, not to mention poorly worded, subject to interpretation and downright confusing. In our mission to develop the best LEED practice exams available, we have made every effort to word our questions just as they would be on the exam; any question that seems to be oddly worded or confusing has been written so intentionally. We want to ensure that you are truly prepared for the real thing. Once you've completed all the questions, send an email to GAanswerkey@greenstepeducation.com to receive the answer key.

Test Taking Strategies

Like many exams, the Green Associate exam is as much about test taking abilities as it is about knowing the correct information. Following these helpful techniques can be the difference between a 169 and a passing score (170 and above):

1. If you can't find the "correct" answer(s), look for the best (least false) answer(s).
2. There's no penalty for guessing, so make sure you don't leave any questions unanswered.
3. Eliminate any incorrect answers before guessing.
4. Avoid spending too much time on confusing questions. Mark the question and come back to it at the end.
5. Read each question carefully, but don't read into each question. Avoid overanalyzing and/or making unrealistic assumptions.
6. At the end of the test, review the summary to make sure you answered all questions.
7. Take breaks if needed.

A Final Note from GreenStep

Our goal is to develop the absolute highest quality LEED exam prep resources available. This is why we've taken the LEED exams more times than anybody on the planet, ensuring that each of our practice questions is as accurate to the real exam as possible. In an effort to continuously improve upon our materials, please send any comments or feedback to the contact page on our website www.greenstepeducation.com. Thank you for choosing GreenStep as your study resource and best of luck on the exam!

1. What factors are included in the calculations for Indoor Water Use Reduction? (Choose 3)
 - a) The total number of fixtures in the building
 - b) The baseline flush rates for water closets and urinals
 - c) The design flow rate for showers, kitchen sinks and lavatory faucets
 - d) Whether dishwashers are Energy Star certified
 - e) The number of people in the building

2. Which earn points in the Sustainable Sites category? (Choose 2)
 - a) Heat island reduction
 - b) Locating near public transportation
 - c) Installing bike racks and showers
 - d) Construction activity pollution prevention
 - e) Rainwater management

3. Which are categories within LEED? (Choose 2)
 - a) Sustainable Sites
 - b) Water Use Reduction
 - c) Energy & Atmosphere
 - d) Indoor Air Quality
 - e) Integrated Design
 - f) Materials Reuse

4. A project uses 1.2 GPF toilets. How much water is reduced per flush?
 - a) 0.1 GPF
 - b) 0.2 GPF
 - c) 0.3 GPM
 - d) 0.3 GPF
 - e) 0.4 GPF

5. Which would be an acceptable form of greywater that may be used to irrigate landscaping? (Choose 3)
 - a) Water from laundry machines
 - b) Water from kitchen sinks
 - c) Water from dishwashers
 - d) Water from lavatories
 - e) Water from showers

6. Which term represents a system that constantly takes in items from outside the system, uses them, and then releases them as waste without a feedback loop?
 - a) Looped System
 - b) Circular System
 - c) Closed System
 - d) Open System



7. The primary area of focus for ASHRAE 189.1 is ____.
- Low emitting materials
 - Construction waste diversion
 - Energy Performance in Low-Rise Residential Buildings
 - Thermal comfort of employees
 - The Design of High-Performance Green Buildings Except Low-Rise Residential Buildings
8. Which of the following defines Heat Island effect?
- The pressure gradient between developed and urban areas
 - A thermal gradient difference between developed and undeveloped areas
 - The total incoming solar radiation for a given area
 - The temperature difference between differences in elevations
 - A building with a district cooling system producing more renewable energy than consumed
9. Which of the following is the process whereby water bodies receive excess nutrients that stimulate plant (algae) growth?
- Decomposition
 - Oxidation
 - Photosynthesis
 - Eutrophication
 - Anaerobic digestion
 - Biodegradation
10. Which of the following is a parameter between 0 and 1 that indicates a material's ability to shed infrared radiation (heat)?
- Emissivity
 - Albedo
 - Conduction
 - Convection
 - Solar Reflectance Index
 - Thermal Emittance
11. Which site would most likely qualify for Diverse Uses?
- An empty parking lot located in a dense urban area
 - A suburban Brownfield site located within 1 mile of light rail public transportation
 - An empty lot located near several onramps to a large freeway intersection
 - A 7 story food processing facility that includes commercial office space located near the center of a 15 acre farm
 - A mixed-use development located in a suburban area that includes housing above a commercial office space
12. Which is most affected by the LEED Site Boundary? (Choose 2)
- Location of bike racks and showers
 - Exterior light pollution
 - Size of the underground parking garage
 - Determining where site disturbance must stop
 - Sizing of the recycling area

13. Which of the following serves to help evaluate a material's total carbon footprint?
- VOC
 - HPD
 - EPD
 - FSC
 - BOD
14. Which of the following helps earn points for Increased Ventilation? (Choose 2)
- Performing a building flush-out
 - Performing Indoor Air Quality tests after construction to test for VOC levels
 - Active mechanical ventilation
 - Passive ventilation
 - Using air filters in compliance with ASHRAE 52.2
15. Which of the following is true regarding exemplary performance thresholds?
- Points for exemplary performance are always counted under the category where the credit is listed
 - All exemplary performance points should always be counted under the Innovation category
 - All Innovation in Design points are achieved via exemplary performance
 - The exemplary performance thresholds are always double the base level thresholds for achieving a credit
16. How many points are needed for LEED Gold?
- 50-59
 - 60-69
 - 70-79
 - 80 or above
17. Which of the following are true regarding costs?
- Certification fees are directly tied to a project's budget
 - Recertification fees are the same as initial certification fees for Existing buildings
 - Registration fees are independent of project size and location
 - Certification fees are based on project location
 - Certification fees for a LEED Silver project differ from those of a LEED Gold project
18. Which of the following are LEED Impact Categories? (Choose 3)
- Identify Sources of Greywater Usage
 - Reverse Contributions to Global Climate Change
 - Enhance Individual Human Health and Well-Being
 - Promote the Development of Low Income Housing
 - Maximize Energy Efficiency While Looking to Sources of Renewable Energy
 - Protect and Restore Water Resources
19. Converting a single level parking lot into a two-level parking structure would most likely help with which credit?
- Light Pollution
 - Heat Island–Non-Roof
 - Preferred parking for carpools
 - Indoor Water Efficiency



20. Which minimizes air contaminants during construction? (Choose 2)
- a) Providing separate bins for commingled debris
 - b) Low VOC adhesives and sealants
 - c) Complying with ASHRAE 55 Standards
 - d) Directly exhausting chemical mixing areas
 - e) Following the SMACNA Guidelines
21. Which would contribute to Indoor Water Use Reduction?
- a) Using potable water to flush toilets
 - b) 0.8 GPF urinals
 - c) Selecting native vegetation
 - d) Drip irrigation
 - e) Energy Star dishwashing machines
22. Which represents the typical order of events in reference to LEED projects?
- a) BOD, OPR, Design Documentation Review, Functional Testing, Construction Documentation Review
 - b) OPR, BOD, Design Documentation Review, Functional Testing, Construction Documentation Review
 - c) Functional Testing, OPR, Design Documentation Review, BOD, Construction Documentation Review
 - d) BOD, OPR, Design Documentation Review, Construction Documentation Review, Functional Testing
23. Vegetated roofs may help with which of the following? (Choose 3)
- a) Recharging a local aquifer
 - b) Enhancing acoustical performance
 - c) Reducing heat island effect
 - d) Reducing structural roofing loads
 - e) Increasing the durability of a roof
24. Within the Minimum Program Requirements, what is the minimum required square footage for NC projects?
- a) 500 square feet
 - b) 1,000 square feet
 - c) 1,200 square feet
 - d) 1,500 square feet
 - e) 5,000 square feet
25. Which of the following most likely contributes to both Indoor Environmental Quality and Energy & Atmosphere Credits? (Choose 2)
- a) Implementing a thermal comfort survey after occupancy
 - b) Daylighting strategies
 - c) Energy Metering
 - d) Natural Ventilation
 - e) Low Emitting Materials

To receive the answer key, send an email to GAanswerkey@greenstepeducation.com - the answer key will be included in the reply. Please send any comments or feedback to the contact page on our website www.greenstepeducation.com. Thank you for choosing GreenStep as your study resource and best of luck on the exam!

ANSWER KEY

1. **b, c, e)** The calculations for Indoor Water Use Reduction include the baseline flush and flow rates, the design case flush and flow rates as well as the number of people (Full Time Equivalents) in the building. Since the calculation is based on FTE, the total number of fixtures in the building is not needed.
2. **a, e)** LEED v4 separates Sustainable Site (SS) credits from Location and Transportation (LT) credits. Quality Transit and Bicycle Network both fall under the Location and Transportation section, not under Sustainable Sites. Construction Activity Pollution Prevention is a Prerequisite and therefore does not earn points.
3. **a, c)** Sustainable Sites and Energy & Atmosphere are the only two answers listed that represent categories in LEED. The other answers are close, but not exact. Other categories in LEED include Water Efficiency (not Water Use Reduction), Indoor Environmental Quality (not Indoor Air Quality), and Materials & Resources (not Materials Reuse).
4. **e)** The baseline flush rate for toilets is 1.6; therefore, the answer is 0.4 gallons reduced per flush.
5. **a, d, e)** The GreenStep Study Guide lists the fixtures that LEED considers eligible for greywater re-use. These include bathroom sinks (lavatories), showers and laundry machines. If the water has come into contact with food waste, as is the case with kitchen sinks and dishwashers, it is not considered an acceptable form of greywater.
6. **d)** The GreenStep Study Guide lists many important terms that are covered on the Green Associate exam such as Open System. Open System defines a system that constantly takes in items from outside the system, uses them, and then releases them as waste without a feedback loop. In general, *Closed* Systems, as opposed to Open Systems, are encouraged because they minimize waste output and are considered more efficient.
7. **e)** As described in the GreenStep Study Guide, ASHRAE 189.1 addresses the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings.
8. **b)** Heat Island effect refers to the difference in the absorption of heat between urban areas and their less dense surroundings. This difference in heat absorption causes a difference in temperature.
9. **d)** As described in the GreenStep Study Guide, eutrophication refers to a reduction in dissolved oxygen in water bodies caused by an increase of mineral and organic nutrients. This generally occurs in the form of agricultural run-off into a water body.
10. **f)** Thermal (or infrared) emittance is a parameter between 0 and 1 (or 0% and 100%) that indicates the ability of a material to shed infrared radiation.
11. **e)** As described in the GreenStep Study Guide, the Diverse Uses credit encourages projects to locate near dense, urban areas with many amenities within walking distance of the site such as restaurants, fitness centers, banks and dry cleaners, etc. Public Transportation is covered under a different credit and therefore would not apply to Diverse Uses.
12. **b, d)** There are a few credits that are affected by the location of the LEED Site Boundary. The LEED Site Boundary factors into Light Pollution Reduction as well as Site Development – Protect or Restore Habitat.
13. **c)** Environmental Product Declarations (EPDs) attempt to quantify all of the material inputs that go into a product – energy, water and materials – based on a Life Cycle Assessment. In so doing, EPDs help evaluate the total carbon footprint of products.
14. **c, d)** Active ventilation and passive ventilation (i.e. operable windows) both contribute to Increased Ventilation. The other options might improve air quality, but they do not contribute to the Increased Ventilation Credit.
15. **b)** As explained in the GreenStep Study Guide, all exemplary performance points should always be counted under the Innovation category.
16. **b)** In order to achieve LEED Gold, a project must receive at least 60 points.
17. **c)** LEED Certification Fees are based on USGBC membership status and project size (square footage). Registration fees are based only on USGBC membership status.
18. **b, c, f)** LEED Green Associate candidates should memorize all of the LEED Impact Categories for the exam. The GreenStep Study Guide lists several: Reverse Contributions to Global Climate Change, Enhance Individual Human Health and Well-Being, and Protect and Restore Water Resources.



19. **b)** Heat Island–Non-Roof awards points if 50% of the parking is under cover. Therefore, a two level parking structure would help qualify for the credit, regardless of the number of total parking spaces.
20. **b, e)** As described in the GreenStep Study Guide, the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) provides guidelines that address indoor air quality during construction. Using low VOC adhesives, sealants, paints and sprays, etc. also helps to minimize air contamination during construction.
21. **b)** As listed in the GreenStep Study Guide, the baseline flush rate for urinals is 0.8 GPF. 1.2 GPF toilets would reduce water below the baseline, thus contributing to Indoor Water Use Reduction. Through a combination of water efficient fixtures, a project is required to achieve a 20% reduction in indoor water usage. Non-potable water would also apply if this had been listed as a possible choice.
22. **b)** As one of the first steps in the commissioning process, the owner must first work with the team to develop the Owner’s Project Requirements (OPR). Ideally this is accomplished in the very early stages of design. In response to the OPR, the design team then develops the Basis of Design (BOD). Design Documentation is submitted once the design drawings are complete. Toward the end of the project, the Commissioning Agent performs functional testing before the Construction Documentation package is submitted for review.
23. **b, c, e)** According to the USGBC, vegetated roofs may provide several benefits, including enhanced acoustical performance, increased durability and reduced heat island effect.
24. **b)** As described by the Minimum Program Requirements listed in the GreenStep Study Guide, the minimum project size is 1,000 square feet for LEED for New Construction projects.
25. **b, d)** Daylighting Strategies and Natural Ventilation are the answers that would most likely contribute to both the Indoor Environmental Quality and Energy & Atmosphere sections in LEED.