

# **US Green Building Council**

## **LEED-AP-O-M Exam**

**LEED AP Operations + Maintenance**

**Questions & Answers**

**Demo**

# Version: 5.0

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**Question: 1**

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An ASHRAE Level 1 walkthrough analysis contributes to what prerequisite or credit?

- A. Energy and Atmosphere Prerequisite, Building-Level Energy Metering
- B. Energy and Atmosphere Credit, Enhanced Refrigerant Management
- C. Energy and Atmosphere Prerequisite, Minimum Energy Performance
- D. Energy and Atmosphere Prerequisite, Energy Efficiency Best Management Practices

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**Answer: D**

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Explanation:

An ASHRAE Level 1 walkthrough analysis is a preliminary evaluation of a building's energy systems to identify obvious energy efficiency opportunities and potential areas for improvement. This type of analysis aligns with the Energy Efficiency Best Management Practices by establishing a baseline understanding of the building's energy use and identifying simple, low-cost measures to improve energy efficiency. It does not directly relate to building-level energy metering, refrigerant management, or the minimum energy performance standards, which are more technical and specific in nature.

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**Question: 2**

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Under Indoor Environmental Quality Credit, Interior Lighting, outlet powered task lighting contributes towards compliance for what category of building space?

- A. Exterior
- B. Lavatory
- C. Mechanical
- D. Individual occupant

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**Answer: D**

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Explanation:

Outlet powered task lighting under the Indoor Environmental Quality Credit, Interior Lighting, contributes towards compliance for individual occupant spaces. This is because task lighting allows individual occupants to control their own lighting levels, which can improve comfort and productivity.

[Reference: LEED v4: Building Operations + Maintenance Guide1, LEED certification for existing buildings and spaces2.](#)

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**Question: 3**

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What credit rewards customers who change their normal consumption patterns in response to the varying price of energy over time?

- A. Energy and Atmosphere Credit, Demand Response
- B. Energy and Atmosphere Credit, Ongoing Commissioning
- C. Energy and Atmosphere Credit, Advanced Energy Metering
- D. Energy and Atmosphere Credit, Green Power and Carbon Offsets

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**Answer: A**

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Explanation:

The LEED AP Operations + Maintenance (LEED AP O+M) V4.1 rewards customers who change their normal consumption patterns in response to the varying price of energy over time under the Energy and Atmosphere Credit, Demand Response. This credit encourages building owners and operators to participate in demand response programs which aim to shift the timing of energy use to off-peak periods when demand on the grid is lower. This helps to reduce the strain on the grid during peak demand periods, potentially avoiding the need for additional power plants.

Reference: [LEED v4: Building Operations + Maintenance Guide](#), [LEED AP with specialty](#), [LEED certification for existing buildings and spaces](#), [LEED AP O+M Exam](#), [Building Operations & Maintenance - Canada Green Building Council \(CAGBC\)](#)

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**Question: 4**

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Cooling tower blowdown is necessary because

- A. too much water in the system is inefficient so its water levels must be lowered
- B. a buildup of dissolved solids increases conductivity which decreases efficiency
- C. excess water treatment chemical levels corrode pipes and bleed-off reduces chemical levels
- D. cold temperatures can freeze pipes if water is not moved and bleed-off prevents that from happening

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**Answer: B**

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Explanation:

LEED v4.1 O+M Reference Guide, p. [1132](#): LEED v4 - U.S. [Green Building Council](#)(<https://www.usgbc.org/guide/om>)[3](#): What is Blowdown Loss in Cooling Towers?(<https://deltacooling.com/resources/faqs/what-is-blowdown-loss-in-cooling-towers>).

Cooling tower blowdown is a process used to manage water quality in cooling systems. It involves discharging a portion of the water from the system to control the concentration of dissolved solids and minerals, which accumulate due to the continuous evaporation of water. These dissolved solids can increase the water's conductivity, leading to scale formation, corrosion, and biofouling, all of which can significantly decrease the efficiency and lifespan of the cooling system. By performing blowdown, the system maintains the water quality within acceptable limits, ensuring optimal performance and energy efficiency of the cooling tower.

Reference:

The need for cooling tower blowdown due to the accumulation of dissolved solids is discussed within the context of water management practices in cooling systems in the LEED AP O+M documentation. This process is crucial for maintaining system efficiency and is covered under the Water Efficiency category, emphasizing the importance of water management in achieving sustainable building operations.

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### **Question: 5**

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For projects not eligible for the ENERGY STAR® rating, the project team could demonstrate compliance with Energy and Atmosphere Prerequisite, Minimum Energy Efficiency Performance by

- A. conducting an energy audit that develops a commissioning plan for the building's major energy using system
- B. providing a program demonstrating no or low cost measures of improvement to increase energy efficiency
- C. developing a master list of findings identifying systems or pieces of equipment including the defects or problems and proposed solutions
- D. demonstrating an energy efficiency of at least 25% better than the national average for typical

buildings of similar  
type based on energy source

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**Answer: D**

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**Explanation:**

Projects not eligible for the ENERGY STAR rating must demonstrate an energy efficiency of at least 25% better than the national average for typical buildings of similar type based on energy source.

This can be done by using the ENERGY STAR Target Finder tool or a custom approved by USGBC.

Reference: [LEED AP O+M Exam Guide](#), page 305; LEED v4.1 O+M Reference Guide, page 97.

For projects not eligible for the ENERGY STAR® rating, an alternative path to demonstrate compliance with the Energy and Atmosphere Prerequisite, Minimum Energy Efficiency Performance, is to show that the building's energy efficiency is significantly higher than the baseline established for similar buildings. Demonstrating energy efficiency that is at least 25% better than the national average for comparable buildings, based on the type of energy used, provides a quantifiable metric that reflects the building's superior performance. This approach aligns with LEED's goal to encourage higher energy efficiency standards and reduce environmental impact through improved building performance.

**Reference:**

This alternative compliance path for projects not eligible for ENERGY STAR® rating is outlined in the LEED for Building Operations and Maintenance reference guide under the Energy and Atmosphere category. It provides a method for buildings to achieve the Minimum Energy Efficiency Performance prerequisite by exceeding the energy performance standards of similar buildings, promoting an advanced level of energy conservation in building operations as emphasized in LEED AP O+M training materials.