LEED v4 Building Design and Construction

**ANSWERS**

Quiz #6

EA

1. Which of these energy sources ae nonrenewable? [Choose two]
2. Solar
3. Coal
4. Natural gas
5. Wind
6. Hydroelectric
7. Early in the design phase what energy efficiency strategy could help a project to reduce the overall energy needs for the building?
8. High-efficiency HVAC systems
9. Install smart controls
10. Building orientation
11. Glazing selection
12. Heating and cooling a building without using mechanical equipment is what type of design strategy?
13. Passive
14. Active
15. Efficient
16. Smart
17. What is commissioning?
18. The process of verifying and documenting that a building has achieved a minimum energy performance standard.
19. The process of involving an energy manager early in the design phase of a project to reduce the overall energy demand of the building.
20. The early involvement of an energy authority to verify that the buildings energy systems are properly working.
21. The process of verifying and documenting that a building and all of its systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the owner’s project requirements.
22. What program allows a local utility to coordinate with building operators to decrease their electricity use during peak times?
23. Demand Response (DR)
24. Dedicated Response (DR)
25. Differential Response (DR)
26. District Response (DR)
27. Which of these commissioning (Cx) process activities must the commissioning authority (CxA) do? [Choose two]
28. Develop the OPR
29. Develop the BOD
30. Prepare a final CX process report
31. Develop and implement a Cx Plan
32. What are the qualifications required to be the commissioning authority (CxA)?
33. Must have documented commissioning process experience on building projects with a similar scope of work.
34. Must be an employee of the owner that has documented commissioning process experience on at least two building projects with a similar scope of work.
35. Must be an independent consultant that has documented commissioning process experience on at least two building projects with a similar scope of work.
36. Must have documented commissioning process experience on at least two building projects with a similar scope of work.
37. Who does the commissioning authority (CxA) directly report their findings to?
38. General Contractor
39. Mechanical sub-contractor
40. LEED AP
41. Owner
42. Design team
43. Which of these are benefits of a properly executed Cx process that meets the goals and objectives of the owner’s project requirements? [Choose three]
44. Reduced energy consumption
45. Lower operating costs
46. Improved coordination with subcontractors
47. Reduced employee absenteeism
48. Increased employee productivity
49. What do contractors use to provide confirmation to the CxA that the systems have been installed, started up, programmed, tested, and balanced, and that the team is ready for functional testing?
50. Scorecards
51. Construction checklists
52. OPR
53. BOD
54. Which of these systems must be commissioned for EA Prerequisite: Fundamental Commissioning and Verification? [Choose four]
55. Building envelope
56. HVAC&R equipment and controls
57. Domestic hot water systems
58. Lighting and daylighting controls
59. Renewable energy systems
60. Fire protection and fire alarm systems
61. Communications and data systems
62. Which of these might be included in the Owner’s Project Requirements (OPR)? [Choose three]
63. Target goals for energy efficiency
64. Codes and Standards
65. Budget considerations and limitations
66. Descriptions of the systems to be used
67. Occupant requirements
68. Who is responsible for documenting the Basis of Design (BOD)?
69. Owner
70. LEED AP
71. Commissioning Authority
72. Design team
73. If a project team has set a goal to earn as many points as possible for EA Credit Optimize Energy Performance which option would you recommend they use for EA Prerequisite Minimum Energy Performance?
74. Energy Cost Budget Method
75. Performance Rating Method
76. Whole-Building Energy Simulation
77. Prescriptive Compliance: ASHRAE 50% Advanced Energy Design Guide
78. Prescriptive Compliance: Advanced Buildings™ Core Performance™ Guide
79. A LEED BD+C: Warehouses and Distribution Centers project that is 75,000 square feet wants to satisfy EA Prerequisite Minimum Energy Performance without using an energy model. Which option would you recommend they use?
80. Prescriptive Compliance: ASHRAE 50% Advanced Energy Design Guide
81. Prescriptive Compliance: Advanced Buildings™ Core Performance™ Guide
82. ASHRAE 50% Advanced Energy Design Guide for Medium to Large Box Retail Buildings
83. The project must use an energy model
84. To comply with the prescriptive compliance: ASHRAE 50% Advanced Energy Design Guide what information is needed? [Choose two]
85. Building size
86. Location
87. Climate zone
88. Number of occupants
89. Which sources of energy must projects meter for EA Prerequisite Building-Level Energy Modeling? [Choose three]
90. Utility company electricity
91. Natural gas
92. On-site wind-generated electricity
93. On-site solar photovoltaic-generated electricity
94. Biofuels
95. To comply with EA Prerequisite Fundamental Refrigerant Management projects must not use what type of refrigerant for new HVAC&R systems?
96. HCFC
97. HFC
98. Propane
99. CFC
100. What must a project complete in order to earn the maximum number of points for commissioning? [Choose three]
101. EA Prerequisite Fundamental Commissioning and Verification
102. EA Credit Enhanced Commissioning, Option 1. Enhanced Systems Commissioning , Path 1: Enhanced Commissioning
103. EA Credit Enhanced Commissioning, Option 1. Enhanced Systems Commissioning , Path 2: Enhanced Monitoring Based Commissioning
104. EA Credit Enhanced Commissioning, Option 2. Envelope Commissioning
105. Which of these are additional tasks required for EA Credit Enhanced Commissioning? [Choose four}
106. Commissioning on-site renewable energy systems
107. Preparing a systems manual
108. Complete a final commissioning report
109. Issue construction checklists
110. Perform a 10-month review
111. Issue owner’s training requirements
112. Develop ongoing commissioning plan
113. A LEED BD+C: New Construction project has achieved 55% improvement in the proposed building performance rating compared with the baseline. How many points could the project earn for EA Credit Optimize Energy Performance, Option 1?
114. 10
115. 12
116. 13
117. 25
118. Which of these characteristics must an advanced energy metering system have? [Choose three]
119. Meters must be revenue-grade
120. Electricity meters must record consumption
121. Electricity meters must record consumption and demand
122. Meters must be capable of transmitting data remotely
123. The systems must be able to store meter data for 36 months
124. Which of these would help a project to earn EA Credit Demand Response?
125. A reduction of 5% in peak electricity demand and 5% in peak natural gas demand
126. A reduction of 5% in peak energy demand and 5% in peak electricity demand
127. A reduction of 10% in peak electricity demand
128. A reduction of 10% in peak energy demand
129. If a project did not use EA Prerequisite Minimum Energy Performance, Option 1 Whole Building Energy Simulation, what must they use to estimate the building’s total annual energy use and cost for EA Credit Renewable Energy Production?
130. Local Averages
131. ENERGY STAR
132. Commercial Buildings Energy Consumption Survey (CBECS) database
133. ASHRAE
134. EPA Target Finder
135. Which of these are eligible renewable energy systems? [Choose three]
136. Wind
137. Wave and tidal energy
138. Ground-source heat pump
139. Solar thermal panels
140. Combustion of municipal solid waste
141. The total annual energy cost for a multifamily residential project for electricity is $20,013 and for natural gas is $46,121. The project team anticipates generating on-site 216,789 kWh of electricity per year. The virtual energy rate is $0.082 per kWh and a utility rate of $0.675 per therm of natural gas. What is the projects percentage of renewable energy?
142. 27%
143. 30%
144. 39%
145. 89%
146. Which of these refrigerants has no ozone depletion potential?
147. CFC-11
148. HCFC-22
149. HCFC-123
150. HFC-134a
151. What is needed to calculate the average refrigerant atmospheric impact? [Choose three]
152. GWP of the refrigerant
153. ODP of the refrigerant
154. Daily usage rate of HVAC units
155. Location of HVAC units
156. Equipment Life
157. What certification must green power and RECs have to qualify for EA Credit Green Power and Carbon Offsets?
158. Green-e climate
159. Green Label
160. Green Score
161. Green-e
162. Green-e Energy
163. Which of these sources could help a projects to earn EA Credit Green Power and Carbon Offsets? [Choose three]
164. Utility provided green power
165. Utility provided steam
166. Carbon offsets
167. Local Wind farm
168. Photovoltaic panels mounted on a nearby parking structure roof
169. RECs