

LEED v4 Building Design and Construction

Quiz #7

MR

1. Which of these is a preferred strategy for reducing waste? [Chose four]
  - A. Source reduction
  - B. Composting
  - C. Reuse
  - D. Recycling
  - E. Waste to energy
  - F. Incinerators
  
2. Which of these is an innovative construction strategy that could contribute to source reduction? [Choose two]
  - A. Prefabrication
  - B. Cabinets made of wheat husks sourced from all over the country and bound together in resin
  - C. Designing to dimensional construction materials
  - D. Solid wood cabinets made from local timber
  
3. Which of these statements best describes Life Cycle Assessment (LCA)?
  - A. An analysis that identifies which high-performance building systems will save money over the life of a project, despite their higher initial cost.
  - B. An analysis of the environmental aspects and potential impacts associated with a product, process, or service.
  - C. An analysis that identifies which high-performance building systems will have lower first costs.
  - D. An analysis that helps designers have informed selection of products to achieve lower GHG emissions and reduced environmental impact.
  
4. Which of these materials must be included in the Materials and Resources (MR) credit category? [Choose three]
  - A. Casework
  - B. Furniture
  - C. Metal studs
  - D. Elevators
  - E. Doors
  - F. Formwork
  
5. Which of these are methods used for determining credit achievement in the Materials and Resource (MR) category? [Choose two]
  - A. Product cost
  - B. Number of qualifying products
  - C. Weight
  - D. Volume
  
6. Which of these must be treated as separate products for the Materials and Resources (MR) credit category? [Choose two]
  - A. Paints of different gloss
  - B. Carpet of different color
  - C. Carpet of different pile height
  - D. Paints of different color

7. Which of these is excluded for the total product cost for the Materials and Resources (MR) credit category? [Choose two]
- A. Taxes
  - B. Delivering fees
  - C. Labor to install material
  - D. Equipment cost to install material
8. To use the default materials cost for Materials and Resources (MR) credits which of these would a project use?
- A. 45% of total construction costs, excluding labor
  - B. 45% of total construction costs
  - C. 45% of total construction costs, excluding labor but including delivery and taxes
  - D. 45% of total material and equipment costs
9. For a product to qualify for the location valuation factor in Materials and Resources (MR) credits which of these must be satisfied?
- A. Product must be extracted, manufactured, and purchased within 100 miles of the project
  - B. Product must be extracted, manufactured, and purchased within 500 miles of the project
  - C. Product must be purchased within 100 miles of the project
  - D. Product must be salvaged within 100 miles of the project
10. What is the location valuation factor of a product that meets the location valuation requirements?
- A. 1
  - B. 2
  - C. 3
  - D. 4
11. What is the contributing value of a material that is part of an assembly based on?
- A. Location purchased
  - B. Component value
  - C. Product value
  - D. Weight
  - E. Percentage of component meeting sustainability criteria
12. To satisfy the requirements for MR Prerequisite Storage and Collection of Recyclables what materials must projects collect? [Choose four]
- A. Tuna fish can
  - B. Ink cartridge
  - C. Wrapping paper
  - D. Uneaten portion of a burrito
  - E. Batteries
  - F. e-waste
  - G. Ice-tea bottle
13. Which of these LEED BD+C projects must conduct a waste stream audit to meet the requirements for MR Prerequisite Storage and Collection of Recyclables?
- A. LEED BD+C: Schools
  - B. LEED BD+C: Hospitality
  - C. LEED BD+C: Retail
  - D. LEED BD+C: Healthcare

14. Which of these waste types is considered as part of a hazardous waste stream? [Choose two]
- A. Printers
  - B. Fluorescent lamps
  - C. Broken glass lamp shade
  - D. Printer ink cartridge
  - E. Copier toner cartridge
15. Which of these does not contribute to MR Credit Construction and Demolition Waste management Planning? [Choose three]
- A. Scrap metal
  - B. Soil
  - C. Rock found on-site
  - D. Concrete
  - E. Drywall
  - F. Tree stumps
16. How can project teams keep track of the quantity of diverted material to meet the requirements for MR Credit Construction and Demolition Waste Management?
- A. Weight
  - B. Cost
  - C. Volume
  - D. Weight or volume but must be consistent
17. Which of these is recommended for projects that have limited storage area for waste containers?
- A. Source separation
  - B. Donating surplus to charitable organizations
  - C. Single-stream recycling
  - D. Waste-to-energy
18. For MR Prerequisite PBT Source Reduction—Mercury which of these must be included in the prerequisite scope for projects planning to reuse existing mercury-containing equipment and lamps? [Choose two]
- A. MRI equipment
  - B. Thermostats
  - C. Lamps
  - D. Thermometers
19. Mercury-containing waste to be addressed in coordination with MR Prerequisite Storage and Collection of Recyclables includes which of the following equipment? [Choose three]
- A. HID lamps
  - B. MRI equipment
  - C. CFL
  - D. Dental waste
20. What is the elemental symbol for mercury?
- A. Lm
  - B. K
  - C. mg
  - D. Hg
  - E. HID

21. Projects earning MR Credit Building Life-Cycle Impact Reduction by following Option 3. Building and Material Reuse must exclude which of these for the calculation? [Choose two]
- A. Hazardous materials
  - B. Carpet
  - C. Acoustic ceiling tiles
  - D. Windows
22. Projects earning MR Credit Building Life-Cycle Impact Reduction by following Option 4. Whole-Building Life-Cycle Assessment must achieve which of these to earn the credit?
- A. Demonstrate a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories
  - B. Demonstrate at least a 10% reduction in global warming potential and a 10% reduction of two of five other impact categories
  - C. Demonstrate a minimum of 10% reduction, compared with a baseline building, in all six impact categories
  - D. Demonstrate a minimum of 10% reduction, compared with a baseline building, in global warming potential (greenhouse gases), in CO<sub>2e</sub>
  - E. Demonstrate a minimum of 5% reduction, compared with a baseline building, in at least three of the six impact categories
23. Which of these are the most common, measurable, and well-understood environmental impacts that LCA tools evaluate? [Choose three]
- A. Human health
  - B. Eutrophication
  - C. Ozone depletion
  - D. Land-use issues
  - E. Global warming potential
24. Identify the options for MR Credit Building Life-Cycle Impact Reduction. [Choose four]
- A. Building and Material Reuse
  - B. Reuse Brownfield Site
  - C. Reuse Historic Building
  - D. Renovation of Abandoned or Blighted Building
  - E. Whole-Building Life-Cycle Assessment
25. Which of these are excluded in the calculation for MR Credit Building Life-Cycle Impact Reduction, Option 4. Whole-Building Life-Cycle Assessment? [Choose two]
- A. Parking structures
  - B. Plumbing fixtures
  - C. Parking lots
  - D. HVAC equipment
26. When calculating surface area for vertical building elements which of these are considered as part of the layers? [Choose two]
- A. Floor finish
  - B. Enclosure
  - C. Interior finish
  - D. Ceiling finish

27. Which of these can be used to earn MR Credit Building Product Disclosure and Optimization— Environmental Product Declarations? [Choose two]
- A. Use at least 10 different permanently installed products sourced from at least five different manufacturers that meet one of the disclosure criteria specified by the requirements
  - B. Use at least 20 different permanently installed products sourced from at least five different manufacturers that meet one of the disclosure criteria specified by the requirements
  - C. Use products that comply with the specified credit criteria for 50%, by cost, of the total value of permanently installed products in the project.
  - D. Use products that comply with the specified credit criteria for 30%, by cost, of the total value of permanently installed products in the project.
28. Environmental Product Declarations (EPDs) must met what standard?
- A. ASHRAE
  - B. Green-e climate
  - C. International Organization for Standardization (ISO)
  - D. Green-e energy
29. For MR Credit Building Product Disclosure and Optimization— Environmental Product Declarations achievement products having a cradle to gate scope that meets Product-Specific Type III EPD can be valued as which of these?
- A. One quarter (1/4) of a product
  - B. One half (1/2) of a product
  - C. One whole product
  - D. Products do not qualify for the credit
30. How can a project earn exemplary performance for MR Credit Building Product Disclosure and Optimization— Environmental Product Declarations? [Choose two]
- A. Purchase 75%, by cost, of permanently installed building products that meet the required attributes.
  - B. Purchase 50%, by cost, of permanently installed building products that meet the required attributes.
  - C. Source at least 40 qualifying products from five manufacturers.
  - D. Source at least 40 qualifying products from ten manufacturers.
31. How can a project earn MR Credit Building Product Disclosure and Optimization—Sourcing of Raw Materials?
- A. Use products that meet at least one of the responsible extraction criteria attributes for at least 15%, by cost, of the total value of permanently installed building products in the project.
  - B. Use products that meet at least one of the responsible extraction criteria attributes for at least 15%, by cost, of the total value of all installed building products in the project.
  - C. Use products that meet at least one of the responsible extraction criteria attributes for at least 25%, by cost, of the total value of all installed building products in the project.
  - D. Use products that meet at least one of the responsible extraction criteria attributes for at least 25%, by cost, of the total value of permanently installed building products in the project.
32. For MR Credit Building Product Disclosure and Optimization—Sourcing of Raw Materials for all wood products that contribute to credit achievement who must have the COC certificate that is current at the time of sale?
- A. Contractor
  - B. Manufacturer
  - C. Supplier
  - D. Vendor

33. What is the default recycled content for steel products when no recycled content information is available?
- 25% preconsumer
  - 25% postconsumer
  - 90% preconsumer
  - 90% postconsumer
34. For MR Credit Building Product Disclosure and Optimization—Sourcing of Raw Material a project team purchased 50 doors salvaged from a local deconstruction site and sold through a local Habitat for Humanity ReStore for \$500. The value of equivalent new doors is documented at \$400 each. What is the total sustainable criteria value for these doors?
- \$25,000
  - \$50,000
  - \$20,000
  - \$40,000
35. Which of these programs would help a project to earn MR Credit Building Product Disclosure and Optimization—Material Ingredients, Option 1. Material Ingredient Reporting? [Choose three]
- Cradle to Gate
  - Cradle to Cradle
  - Health Product Declaration
  - GreenScreen v1.2 Benchmark
  - Manufacturer Inventory
36. For MR Credit Building Product Disclosure and Optimization—Material Ingredients, Option 2. Material Ingredient Optimization if all ingredients have undergone a full GreenScreen Assessment what value for the product can projects use?
- 25% of cost
  - 50% of cost
  - 100% of cost
  - 150% of cost
  - 200% of cost
37. MR Credit PBT Source Reduction—Mercury applies to which type of project?
- LEED BD+C: Schools
  - LEED BD+C: Healthcare
  - LEED BD+C: Retail
  - LEED BD+C: New Construction
38. Which of these lamps should projects not specify in order to earn Credit PBT Source Reduction—Mercury? [Choose two]
- T-8 fluorescent, U-bent
  - Circular fluorescent
  - High-pressure sodium
  - Probe start metal halide
39. For MR Credit PBT Source Reduction—Lead, Cadmium, and Copper what standard must all solder joints comply with?
- ASHRAE
  - ISO
  - ASTM
  - GreenSeal
  - California

40. Which of these are not permitted as additives to paint for MR Credit PBT Source Reduction— Lead, Cadmium, and Copper? [Choose two]
- A. Lead
  - B. Chromium
  - C. Mercury
  - D. Cadmium
  - E. Urea formaldehyde
41. In order for healthcare projects to comply with MR Credit Furniture and Medical Furnishings what standard must all new furniture or medical furnishing assemblies meet?
- A. BIFMA
  - B. ASHRAE
  - C. ISO
  - D. ASTM
42. For Materials and Resources (MR) credits how are preconsumer recycled materials valued?
- A. 0.25, by cost
  - B. 0.5, by cost
  - C. 0.25, by weight
  - D. 0.5, by weight
43. Which of these strategies could help a project to earn MR Credit Design for Flexibility? [Choose two]
- A. Interior partition walls
  - B. Movable casework
  - C. Curtains instead of wall partitions
  - D. Demountable partitions
44. How can projects earn an exemplary performance point for MR Credit Construction and Demolition Waste Management?
- A. Divert 100% and Three Material Streams
  - B. Divert 50% and Three Material Streams or Divert 75% and Four Material Streams and do not generate more than 2.5 pounds of construction waste per square foot of the building's floor area.
  - C. Divert 75% and eight Material Streams
  - D. Do not generate more than 5.0 pounds of construction waste per square foot of the building's floor area.
45. Which of these types of material do not count as diversion, but must be included in total construction and demolition waste?
- A. ADC
  - B. Reused
  - C. Salvaged
  - D. Donated