

## Overview of Sustainable Design Final Exam

1. The need for solar control glazing may be reduced if which of the following is explored earlier in the project:
  - a. Selection of high-efficiency HVAC systems
  - b. Additional wall insulation
  - c. Orientation and arrangement of windows in the building in order to limit solar gain
  - d. Availability of renewable electricity from the local utility
2. Interior finishes for a sustainable design...
  - a. Are unimportant, since they have a short useful life
  - b. Should try to minimize VOCs and other potentially harmful off-gassing chemicals
  - c. Should always be recycled materials
  - d. Should be chosen principally for their durability
3. Choosing a building site in an urban context with available access to public transit
  - a. Indirectly supports reduction of automobile travel and emissions
  - b. Available transport options and shorter commutes
  - c. Lower cost for site development because less parking may be needed
  - d. All of the above
4. What is the "tripod" that makes up the Triple Bottom Line?
  - a. Health, Safety, Welfare
  - b. Bigger, Stronger, Faster
  - c. People, Planet, Profit
  - d. Firmness, Beauty, Delight
5. Which of the following building components typically has the longest lifespan?
  - a. Building control systems
  - b. Floor finish materials
  - c. Exterior cladding
  - d. HVAC systems
6. Commissioning provides what benefit for a building at the beginning of occupancy?
  - a. Ensures that the systems are operating as intended
  - b. Establishes a future value for the sale of the building
  - c. Selects utility providers for services to the building
  - d. Surveys the occupants to determine what they like and don't like about the building

13. Externalities are:
  - a. Issues that can only be solved by local government intervention
  - b. Factors that ultimately effect everyone
  - c. Factors outside the designers' control, and therefore don't need to be worried about.
  - d. The outermost face of a building cladding system
  
14. Adaptive reuse is an important sustainability strategy for ...
  - a. Quickly delivering a project, since the structure already exists.
  - b. Maintaining the energy efficiency of the existing building.
  - c. Avoiding the presence of Red List materials in a project.
  - d. Preserving the embodied energy of an existing building.
  
15. Durable, long-lasting exterior cladding materials are:
  - a. Undesirable, because of their higher cost.
  - b. Only appropriate in cold-weather climates.
  - c. Preferable for extending the useful life of a building.
  - d. Harder to work with, and therefore not suited for sustainable buildings.
  
16. How does the quality of construction of a building relate to sustainability?
  - a. Sustainable features must be traded off as quality and cost are increased.
  - b. Quality construction will last longer, which extends the sustainable use of the building.
  - c. Sustainable features will function regardless of the overall building quality.
  - d. Only the highest quality components qualify as sustainable.
  
17. What two aspects of sustainability can an ERV (energy recovery ventilation unit) contribute to?
  - a. Energy efficiency and stack effect
  - b. Ground source heat pump and stack effect
  - c. Energy efficiency and indoor air quality
  - d. Ground source heat pump and night-time flushing
  
18. Who is responsible for the building being operated in a sustainable manner?
  - a. The building owner and management
  - b. The design team
  - c. The occupants and users
  - d. All of the above
  
19. Daylighting is...
  - a. Preferable where possible, because it has no energy cost and is the highest quality light.
  - b. Problematic, because the accompanying solar gain always has to be offset.
  - c. Limited in usefulness, because only south-facing windows can use it.
  - d. Not controllable, because the sun changes position throughout the year.
  
20. The Cradle-to-Cradle principle is...
  - a. Increased efficiency and performance by using all-new materials
  - b. Used to evaluate building energy use
  - c. A program to ensure the comfort of interior spaces
  - d. Waste from one process serves as feedstock for another process

21. From which of the following lists should materials not be used on a project?
- a. EnergyStar rated equipment
  - b. Red List materials
  - c. Cradle-to-Cradle certified products
  - d. Materials with recycled content
22. Stormwater control is best done:
- a. On the building site, to recharge the underground water table
  - b. By quickly moving surface water to nearby storm drains
  - c. By preventing water from soaking into the ground
  - d. With central processing plants to filter contaminants