

TEST BOOKLET
BOC 1008 – O & M Practices for Sustainable Buildings
Edition 1.10

TEST INSTRUCTIONS

A period of 1 hour is available for the test, but it will not be strictly timed. This is an open book test. You may use any notes or handout materials of your own. Mark all answers *only* on the ANSWER SHEET. Make *no marks* in the TEST BOOKLET.

For multiple choice questions, *make only one choice* by circling the corresponding letter on the ANSWER SHEET. Where it appears that two answers may be correct, choose the one *best* answer. There are no questions that require the circling of more than one choice.

For questions of the matching type, write in the numbers that correspond to the answers on the blanks on the ANSWER SHEET. Each number should be used only once; in other words, once you have used a number in a blank, it shouldn't be used in another blank.

Take a look at the sample question:

In the past, asbestos fibers were commonly used in numerous building materials, including which of the following:

- A. Pipe Insulation
- B. Furnishings
- C. Window coverings, such as drapes
- D. All of the above.

While all three could have contained asbestos, it was *commonly used* in only one of these--pipe insulation. The answer should be marked by drawing a circle around letter "A" on the ANSWER SHEET.

(Note: In the preceding example question, only pipe insulation was included as a material that commonly contained asbestos. That *does not mean* that *only* pipe insulation contained asbestos. It should be understood that the items covered in this examination have been chosen to *sample* the operator's knowledge.)

BEGINNING OF TEST

Mark all answers on *only* the ANSWER SHEET. Make *no* marks in the TEST BOOKLET.

1. Which of the following is not one of the “Three E’s” of sustainability?

- A. Equity
- B. Everyone
- C. Ecology
- D. Economy

2. What percentage of total U.S. electricity consumption do buildings consume?

- A. 30%
- B. 40%
- C. 48%
- D. 60%

3. Operations staff support sustainable site improvements by:

- A. Making bike storage systems safe and accessible.
- B. Providing access paths to bus stops.
- C. Maintaining showers and changing rooms for people who bike or walk to work.
- D. All of the above.

4. Select the statement that supports sustainable landscapes practices.

- A. Increase the amount of turf grass on the site.
- B. Replace native vegetation with non-native pest resistant species.
- C. Mulch plants regularly to preserve moisture.
- D. None of the above

5. Integrated Pest Management (IPM) is an approach that emphasizes:

- A. Regular treatment with chemical agents to control pests.
- B. An environmentally sensitive pest management approach
- C. An approach focused mainly on interior pests.
- D. Ignoring pests until an occupant complains.

6. In a typical commercial building, what percentage of water use do restrooms and kitchens account for?

- A. 61%
- B. 80%
- C. 47%
- D. 14%

- 7. What is the goal of sustainable storm water management?**
- A. Capture storm water and get it off site as quickly as possible.
 - B. Re-establish and/or mimic natural systems that re-charge groundwater.
 - C. Maximize the use of impervious surfaces.
 - D. All of the above.
- 8. The main types of permeable paving are:**
- A. Poured.
 - B. Block pavers.
 - C. Grasscrete.
 - D. All of the above.
- 9. Which of the following would be considered a renewable energy system?**
- A. Air Source Heat Pump
 - B. Solar PV
 - C. Natural Gas Fired Co-gen
 - D. Coal Fired Steam
- 10. Choose the correct characteristics of good environmental indoor quality:**
- A. low VOC carpet; fixed-intensity lighting; acoustical comfort; operable windows near desks
 - B. bio-based lubricants; low-emitting adhesive; limited views to the outside; fixed-intensity lighting
 - C. acoustical comfort; access to day light; operable windows near work stations; low VOC paint
 - D. sealed windows; no VOC carpet; alternative-fuel vehicles; furniture with no formaldehyde resins
- 11. Strategies to reduce the energy load of HVAC systems include:**
- A. Maintain the thermostat at 76° during the summer and 70° during the winter.
 - B. Run equipment even when occupants are not in the building.
 - C. Close blinds on the north side of the building.
 - D. Seal windows to ensure complete control over conditioned space.
- 12. Which water-using fixtures require regular inspection and maintenance or repair to ensure proper operation and optimal water use?**
- A. Waterless urinals and pressure assist toilets
 - B. Automatic sensor fixtures
 - C. Lavatory faucets
 - D. All of the above.
- 13. Single pass equipment can be made more water efficient by:**
- A. Reusing the water on site, such as an irrigation system.
 - B. Using and maintaining controls that manage the flow of water.
 - C. Checking for and repairing any leaks.
 - D. All of the above.

14. In order to improve the energy performance of existing systems and equipment, a building facility department should _____.

- A. Benchmark energy consumption.
- B. Request a bigger budget for facilities.
- C. Reduce operations schedules.
- D. Hire additional staff.

15. What can be done to improve the sustainability of an operation?

- A. Use biodegradable soaps and cleaners.
- B. Switch fleets to gasoline engines.
- C. Utilize products from vendors that have sustainability plans for their operations.
- D. Purchase goods only made from virgin resources.

16. What percentage of a commercial building's waste stream includes glass, metal, and plastic?

- A. 18%
- B. 70%
- C. 10%
- D. 2%

17. What does an ENERGY STAR Portfolio Manager benchmark score of 70 mean?

- A. 70% of the building operations staff holds an Energy Star certification.
- B. The building is more efficient than 70% of similar buildings.
- C. Owners can save on average 70 cents per square foot annually in energy and other costs.
- D. The building reduced energy, natural gas and indoor and outdoor water use by 70%.

18. What factors contribute to the success of a recycling program and sustainable features such natural ventilation, operable windows, and dual flush toilets?

- A. Teaching building occupants about sustainable features and ways to reduce resource flows.
- B. A team-minded approach to promote staff involvement in greening efforts.
- C. Provide informational signs to remind and inform stakeholders.
- D. All of the above.

19. Which of the following decreases the sustainability of a building?

- A. Taking into account the entire life cycle costs of materials.
- B. Increasing energy efficiency.
- C. Using materials with high emitting volatile organic compounds.
- D. Reducing the solid waste stream.

20. Which of the following lists the steps for developing a waste reduction program in the correct order?

- A. Write a waste reduction policy; promote staff and occupant participation; conduct a baseline waste audit; establish a way to track waste
- B. Conduct a baseline waste audit; write a waste reduction policy; establish a way to track waste; promote staff and occupant participation
- C. Write a waste reduction policy; establish a way to track waste; conduct a baseline waste audit; promote staff and occupant participation
- D. Conduct a baseline waste audit; establish a way to track waste; promote staff and occupant participation; write a waste reduction policy

END OF TEST

Please return the TEST BOOKLET and your ANSWER SHEET to the administrator.