

NRGY 235: Building Energy Efficiency

Week 12 Quiz



1. What renewable energy source is feasible for nearly all buiding sites and now more cost effective than ever before?
 - a) Micro-Hydro
 - b) Ground Source Heat Pump
 - c) Wind Power
 - d) Photovoltaics
2. In the most literal sense what must a NZE building do or be?
 - a) Make all the power it uses each month that month
 - b) Make all the power it is using at the time
 - c) On the grid
 - d) Off the grid
3. What is an issue with many NZE buildings?
 - a) Affordability
 - b) Their ability to actually produce all the energy they use
 - c) Esthetics
 - d) Ease of using their complex controls
4. What is the best answer? Fill in the blank: Once NZE building loads are reduced by air tight and super insulated envelope the loads should be met with _____ equipment and systems.
 - a) Efficient
 - b) Passive
 - c) Right sized
 - d) Active
5. Solar thermal is important to Passive House certified and NZE building because?
 - a) It reduced the load on the active DHW system
 - b) It is the lowest energy method of achieving hot water
 - c) Drainback systems are more elegant than closed loop
 - d) It is an inexpensive way to heat water
6. During the etching stage of PV cell development a tiny layer of what is removed from water revealing the underlying crystal structure?
 - a) Glass
 - b) Phosphorus
 - c) Boron
 - d) Silicone
7. What is the best answer: High efficiency low BTU mechanical equipment and

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- very efficient thermally broken windows and doors are considered necessary for Passive House buildings as well as Ultra-high efficiency/NZE buildings in more extreme climates? What is the issue we find the US?
- a) Expense
 - b) Availability, due to few manufactures and distributors of these materials and mechanical equipment in the US
 - c) Expertise
 - d) All of the above
8. What is an important part of meeting the conditioning needs with passive solar design?
- a) Irradiance
 - b) Insolation
 - c) Active shading
 - d) Thermal mass
9. Achieving the low EUI of 4.75 kBtu/ft¹ of conditioning in a Passive House, surface area to volume ration should be less than or equal to what (m²/m³)?
- a) 5
 - b) 7
 - c) 6
 - d) 8
10. Choose the best answer: The DOE Solar Decathlon contest pushes building efficiency and renewable technology to the edge. What is the greatest benefit of the contest?
- a) Make high efficiency materials less expensive and easier to get in the US
 - b) Education, development, and exposure to technologies and strategies for extreme efficiency and on site energy production
 - c) To push the envelope of efficiency
 - d) See who can make the least expensive and efficient work of art