

## Practice Test #4

1. The location above sea level of a structure is referred to as:
  - a. altitude
  - b. azimuth
  - c. elevation
  - d. Zenith
  
2. The roof to be installed on has only 50% of the area available, free of shade and other obstructions. Half of that area is to have a pool heater and the other half PV. If the total roof area is 200 square feet, how many square feet will be available for PV?
  - a. 25 sq. ft.
  - b. 50 sq. ft.
  - c. 125 sq. ft.
  - d. 150 sq. ft.
  
3. John wants to size an automatic AC equipment switch. The total wattage of the system is 7,200 and the voltage is 240. Using 1.25 A/C multiplier what would the amperage be?
  - a. 20 a
  - b. 30 a
  - c. 40 a
  - d. 60 a
  
4. To have a valid MPP reading for an IV curve you must have
  - a. amperage only
  - b. voltage only
  - c. power only
  - d. amperage and voltage
  - e. power at short circuit
  
5. Of the following sealant materials, which will stay pliable and not break down under UV rays?
  - a. painters heavy duty caulk
  - b. black roofing cement
  - c. butyl rubber caulking compound
  - d. silicone rubber
  - e. supper glue
  
6. For structural components in a residence, loads are measured in lbs. per square:
  - a. meter
  - b. inch
  - c. foot
  - d. millimeter
  
7. Watt hour problems - from the handout - please work the watt hour problems.

8. What effects voltage drop more
- the latitude
  - the type of building (commercial/ residential)
  - the size of the connector
  - the length of the conductor
  - the altitude at solar noon
9. A house is built in a clearing with 40 feet clear in all directions of the structure. When will shadows on the roof be the biggest concern?
- spring
  - fall
  - winter
  - summer
10. If a module is 18.5% efficient, how many watts would be produced at solar noon per square meter at sea level on a clear day in June with a temperature of 25 degrees C?
- 285
  - 235
  - 185
  - 135
  - 105

11. Please define the following in your own words:

- ground mount
- fixed tilt
- adjustable tilt
- horizontal tracker
- dual axis tracker
- ballasted system
- Building integrated system
- adhered thin film
- CPV

12. For items a - i in 11 above, where would each of these be the most practical?

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13. ABC Solar has done a site evaluation and complete load analysis of a residence where PV is to be installed. The property owner wishes to offset 80% of his annual use of 12,500 kilowatt hours. Using the NREL site they discover that the location of

the property averages 5 hours of peak sun. The owner wishes to use an inverter he received as a gift which has been rated at .85 efficiency on the *Go Solar California* site. Because of an automatic washing system there will be no soiling. In the cool weather location and because of other ideal conditions, it was found that temperature would not be a problem. What size system in kilowatts will be required?

- a. 10.5
- b. 6.5
- c. 11.5
- d. 9.5
- e. 7.5