

1. Thermal comfort is best described as which of the following?
 - a. a building code requirement -- rarely is this the case in North America
 - b. a design intent**
 - c. a design method -- a destination, not a method
 - d. a necessity for survival -- no, people have survived in uncomfortable conditions for centuries

2. ASHRAE's definition of comfort is:
 - a. "to strengthen morally or spiritually, to encourage, hearten, or inspire" -- a dictionary definition
 - b. "the condition of lack of discomfort" -- some people say this
 - c. "a sense that occurs when body core temperature is 97°F or 98°F" -- oh no, that would be normal
 - d. "the state of mind that expresses satisfaction with the thermal environment"**

3. The four characteristics of an *environment* that most influence thermal comfort in a room are:
 - a. wet-bulb temperature, relative humidity, air speed, and surface colors -- colors have a secondary and minor impact
 - b. dry-bulb temperature, wet-bulb temperature, relative humidity, and air speed -- RH can be derived from DBT and MRT
 - c. dry-bulb temperature, wet-bulb temperature, air speed, and surface temperature (MRT)**
 - d. temperature, clothing, solar energy, activity -- two of these are personal, not environment related

4. An activity level of 1 "met" is roughly equivalent to:
 - a. a brisk walk -- 2.0-3.8 MET depending how briskly
 - b. seated office-type work**
 - c. a short game of tennis -- 3.6-4.0 for a singles game
 - d. a very deep sleep -- likely around 0.7 MET

CHOOSE either 5a or 5b

5a. As a designer, do you feel thermal comfort in the built environment is more a physical phenomenon (heat flows) or a psychological phenomenon (impressions)? WHY?

Both physical and psychological factors influence thermal comfort. In some cases we (as occupants) have more control over the physical environment, though many times we have no control at all. As designers, we can design for both the physical and psychological factors of a space. (If you justified physical or psychological with an appropriate answer, you were given credit).

A good answer: *"There are examples of people functioning outside of the comfort zone (schools). Another examples include putting up pictures of waterfalls in the summer in Japanese homes to psychologically make it seem cooler. Also Finnish people heat themselves up in a sauna to the point where walking out in the cold is still comfortable."*

5b. Alison has at last realized her ambition of being a surfer in Hawaii. Knowing that the climate is hot and humid, sketch and describe an appropriate **design response** that Alison should use to build her surf shack (plan, section, description of materials). Any well-conceived rationales will be seriously considered.

If you sketched a plan and section and described lightweight materials and a structure that was oriented to accept the predominant wind direction, you received credit.