# Comfort and Climate Quiz Answer Key

# Weatherization Energy Auditor – Single Family

DISCLAIMER: This quiz is intended for use as an interim review. Distribute to students after training the associated curriculum chapter, or the next day, to refresh the lesson. Being publicly available renders this specific quiz invalid for use as a formal assessment tool for accreditation.  See Tier 2.14(b) IREC 01022 ISPQ accreditation standard.

Learning Objectives

By attending this session, participants will be able to:

* List the basic principles of human thermal comfort.
* Describe relative humidity.
* Demonstrate how to use a psychometric chart.

Questions and Rationale

**Objective:**

* Describe relative humidity.

**Question:**

1. The amount of water vapor contained in a given volume of air compared to the total amount of water vapor it is capable of containing is called:

1. Dew point.
2. Relative humidity.
3. Condensation.

**Rationale:**

**A** is incorrect because dew point is the temperature at which water vapor is transformed to a liquid state.

**B** is correct because relative humidity is defined as “The amount of water vapor contained in a given volume of air compared to the total amount of water vapor it is capable of containing.”

**C** is incorrect because condensation is water in a liquid state.

**Objective:**

* List the basic principles of human thermal comfort.

**Question:**

2. Humans are most comfortable at:

1. 10% - 50% RH
2. 30% - 90% RH
3. 15% - 75% RH

**Rationale:**

**A** is incorrect because 10% is too dry and can affect a person’s health.

**B** is incorrect because 90% is uncomfortably humid and interferes with our body’s natural cooling system.

**C** is correct.

**Objective:**

* Demonstrate how to use a psychometric chart.

**Question:**

3. Relative humidity is defined as:

1. The amount of water vapor contained in a given volume of air compared to the total amount of water vapor it is capable of containing.
2. The number of grains of water vapor per pound of dry air.
3. The intersection of the wet bulb and dry bulb temperature on a psychrometric chart.

**Rationale:**

**A** is correct.

**B** is incorrect because the number of grains of water per pound of dry air is the definition of absolute humidity.

**C** is incorrect because the wet and dry bulb temperatures are values derived from a psychrometer and used to find relative humidity and dew point on a psychometric chart.

**Objective:**

* List the basic principles of human thermal comfort.

**Question:**

4. What list of variables describes the key influences on human thermal comfort?

* 1. Dew point, absolute humidity, condensation, ventilation, mean radiant temperature, clothing insulation value
  2. Clothing insulation value, air temperature, relative humidity, air motion, mean radiant temperature, metabolic rate
  3. Air temperature, metabolic rate, psychrometers, condensation, dew point, mean radiant temperature

**Rationale:**

**A** is incorrect because dew point, absolute humidity, and condensation do not influence human thermal comfort.

**B** is correct because all these things play roles in influencing human thermal comfort.

**C** is incorrect because psychrometers, condensation, and dew point are not key influences on human thermal comfort.