# Skill Development Exercises for Chapter 4

**4-1.** External offices with windows will have different thermal characteristics than windowless rooms in the interior of the building:

a) True b) False

**Answer: a, True**

The internal offices are affected by the occupants and heat-producing equipment. The external offices are also affected by the external temperature and solar gain.

**4-2.** In a building with a natatorium, the air pressure gradients within the building should _____:

a) Draw air from the natatorium into the rest of the building

b) Draw air into the natatorium from the rest of the building

c) Relieve the natatorium air intake

d) All of the above e) None of the above

**Answer: b**

By maintaining the natatorium pressure below the adjacent building areas, the natatorium aromas will be contained within the natatorium.

**4-3.** Which of the following is an advantage of an all-air system?

a) Additional duct clearance is not required

b) Air balancing in large systems is less difficult

c) Vertical shaft space is not required

d) All of the above e) None of the above

**Answer: e**

**4-4.** Single-duct, single-zone systems can respond simultaneously to more than one set of space conditions, in more than one area at a time.

a) True b) False

**Answer: b, False**

The definition of a single-zone system is that it supplies one zone.

**4-5.** In air-and-water systems, the air supply generally has a constant volume:
a) True b) False

**Answer: a, True**

**4-6.** Evaporative coolers_____:
a) Evaporate water into an airstream
b) Exchange sensible heat for latent heat
c) Can be either direct or indirect
d) All of the above e) None of the above

**Answer: d**

**4-7.** An air economizer can achieve energy savings when _____:
a) The outdoor air enthalpy is lower than the supply air enthalpy
b) The outdoor air enthalpy is higher than the supply air enthalpy, but lower than the return air enthalpy
c) Both of the above d) None of the above

**Answer: c**

**4-8.** A minimum height of _____ above the roof surface is recommended for locating outside air louvers where light snowfall is expected:
a)1.0 ft b) 2.5 ft c) 4.0 ft d) All of the above e) None of the above

**Answer: b**