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Continuing Education Course #058  
HVAC Design  
Fundamentals

1. Direct expansion (DX) systems provide cooling using the:

- a. VAV cycle
- b. Refrigeration cycle
- c. Cooling tower cycle
- d. Blow down cycle

2. Smaller projects tend to use:

- a. DX systems
- b. Water-cooled chillers
- c. Air-cooled chillers
- d. Evaporative coolers

3. HVAC system type selection is prescribed by code:

- a. True
- b. False

4. Which of the following is a true statement:

- a. VAV systems have multiple zones
- b. Ventilation air is prescribed by code
- c. Some HVAC-related codes are found in the Energy Code
- d. All of the above

5. Comcheck cannot be used in:

- a. MA & MO
- b. GA & IL
- c. CA
- d. OR & NJ

6. Chiller & boiler plants often have a degree of redundancy:

- a. True
- b. False

7. RTU stands for:

- a. Return terminal unit
- b. Rooftop unit
- c. Registered temperature upswing
- d. None of the above

8. HVAC designers:

- a. Can put mechanical equipment anywhere they want
  - b. Can make ducts any size because architects will lower the ceilings as needed
  - c. Must coordinate their work with other design professionals
  - d. All of the above
9. Design CFM's should be shown on the drawings accurate to 2 decimals (247.16 CFM):
- a. True
  - b. False
10. Diffusers should be:
- a. Snapped to the ceiling grid
  - b. Labeled with the CFM
  - c. Sized to avoid noise problems
  - d. All of the above
11. A Ductulator is used to size:
- a. Duct
  - b. Pipe
  - c. HVAC Units
  - d. None of the above
12. Mechanical drawings are used only to build the project
- a. True
  - b. False
13. Mechanical drawings include:
- a. Plans
  - b. Schedules
  - c. Details
  - d. All of the above
14. Which of the following is the best selection for a cooling load calculated to be 10.6 tons:
- a. 7.5 tons
  - b. 10 tons
  - c. 12.5 tons
  - d. None of the above
15. A split system is:
- a. DX system consisting of an AHU and a CU
  - b. Set of supply and return piping
  - c. Typically applied to large projects
  - d. None of the above
16. The best way to perform heating and cooling load calculations:
- a. Ductulator
  - b. Computer program
  - c. Sizing chart
  - d. None of the above
17. Which of the following best addresses the impact of drawing ventilation air into an RTU:

- a. Add 5°F to the outdoor sensible cooling design DB in the load program
- b. Round the VAV CFM to the nearest 5
- c. Change the heating supply air temperature to 85°F in the load program
- d. None of the above

18. The lesser of the outside air for ventilation and the required make-up is scheduled on the drawings for outside air intake.

- a. True
- b. False

19. Specifications can be 8.5"x11" or on the drawings:

- a. True
- b. False

20. The best HVAC systems:

- a. Are not seen, heard, or felt
- b. Are located next to the building entrance, are noisy, and blow your hair around
- c. Consume no energy
- d. All of the above

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