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Continuing Education Course #610  
Engineering after the Flood

1. Who may prepare and certify an Elevation Certificate?
  - a. Only a Professional Engineer licensed in that state.
  - b. Only a Professional Surveyor and Mapper licensed in that state.
  - c. Only a Registered Architect licensed in that state.
  - d. Any of the above.
  
2. How high must an air conditioning condenser be raised in a nine-foot flood zone?
  - a. 9 feet
  - b. 10 feet
  - c. 11 feet
  - d. 12 feet
  
3. Equipment that is raised above flood and freeboard level outside must also be flood proof.
  - a. True
  - b. False
  
4. In which section of an Elevation Certificate does the Professional Engineer affix the seal?
  - a. Section A
  - b. Section B
  - c. Section C
  - d. Section D
  
5. The program to open the FEMA Elevation Certificate is:
  - a. PDF filler
  - b. Windows PDF
  - c. Adobe Acrobat
  - d. Foxit reader
  
6. Buildings with a simple slab-on-grade are classified in which diagram?
  - a. Diagram 1
  - b. Diagram 2
  - c. Diagram 5
  - d. Diagram 6
  
7. Buildings with a crawl space on grade but no enclosure are classified as:
  - a. Diagram 1
  - b. Diagram 2
  - c. Diagram 5
  - d. Diagram 6

8. Flood zones are based on which return frequency storm?
- a. 10 years
  - b. 25 years
  - c. 50 years
  - d. 100 years
9. Which is not a reason to complete an Elevation Certificate?
- a. Obtaining a building permit
  - b. Determining structural wall material
  - c. Insurance purposes
  - d. FEMA compliance
10. In what year was the 1st NVGD established?
- a. 1920
  - b. 1929
  - c. 1983
  - d. Never established
11. Upon what year is the NAVD based ?
- a. 1988
  - b. 1989
  - c. 1990
  - d. 2000
12. To which state does the National Oceanic and Atmospheric Administration map open?
- a. Arizona
  - b. Florida
  - c. Virginia
  - d. Colorado
13. Each benchmark has its own unique PID.
- a. True
  - b. False
14. In what unit are benchmarked elevations entered onto the Elevation Certificate form?
- a. meters
  - b. inches
  - c. feet
  - d. yards
15. About how far should a rotary leveling instrument be located from the rod?
- a. 20 feet
  - b. 50 feet
  - c. 100 feet
  - d. 200 feet
16. If a benchmark reads 15.600 feet and the rod reads 3' – 4 3/4" what is the Height of Instrument?
- a. 4 feet
  - b. 15.6 feet
  - c. 12.2 feet
  - d. 19 feet

17. What accuracy is required on the elevation certificate form?
- a. Nearest foot
  - b. Nearest inch
  - c. Nearest one tenth of a foot
  - d. Nearest 1/8 inch
18. If a house structure market value alone is \$196,000, how much repair cost can be allowed in a flood zone?
- a. \$97,000
  - b. \$100,000
  - c. \$150,000
  - d. \$196,000
19. The Professional Engineer fee to design flood repair plans and specifications should be included on the FEMA 50% cost form.
- a. True
  - b. False
20. Alternative air conditioner condenser support instead of Styrofoam pads are:
- a. cast-in-place concrete pads
  - b. precast concrete pads
  - c. aluminum brackets
  - d. All of the above.
21. A preferred reason not to mount an air conditioner condenser on a building bracket is
- a. Cost
  - b. Vibration annoyance
  - c. Stability
  - d. It passes flood water through it.
22. What is a typical strength for precast prestressed concrete?
- a. 3000 PSI
  - b. 6000 PSI
  - c. 10,000 PSI
  - d. 12,000 PSI
23. Copper line sets holding refrigerant can run any length without efficiency drop.
- a. True
  - b. False
24. What are the water flow forces on a solid pedestal?
- a. Frontal impact on upstream side
  - b. Drag effect on sides
  - c. Negative pressure slash suction on downstream side
  - d. All of the above.
25. How is beach sand best removed if it clogs an open watercourse drainage channel?
- a. Natural Erosion
  - b. Residents hand shovels
  - c. Excavator or dozer
  - d. Wave action