

New York City College of Technology – City University of New York
300 Jay Street, Brooklyn, New York 11201

Department of Architectural Technology

PROFESSOR JASON MONTGOMERY

ARCH 1240 METHODS OF CONSTRUCTION IN ARCHITECTURE

FINAL EXAM DECEMBER 15, 2009

1 HOUR 30 MINUTES 50 QUESTIONS TOTAL

NAME _____

COURSE SECTION#: 9443 9444

1. What is the primary intent of building codes?
 - A. To specify the sizes of elements
 - B. To test and determine the fire rating of an assembly
 - C. To ensure the health and safety of the occupants
 - D. To determine the FAR and the sky exposure plane
 - E. To regulate the allowable use in the zoned area

2. Which construction type is most fire resistant?
 - A. Load Bearing Masonry
 - B. Type VB
 - C. Reinforced Concrete
 - D. Type IA
 - E. All of the above

3. What is the primary intent of the American Disabilities Act?

4. Name two loads a foundation must support.

5. Which type of settlement can cause serious structural problems in a building structure?

6. Which professional is responsible for the analysis of the subsurface conditions and the recommendation for an approach to the foundation design?
 - A. Structural Engineer
 - B. Geotechnical Engineer
 - C. Architectural Engineer
 - D. Excavation Engineer
 - E. Soil Engineer

7. What is the recommended pitch of a low slope roof?

8. When excavating soil for a foundation, the contractor must often install this to support the slopes of the excavation.
 - A. Caissons
 - B. Shoring
 - C. Footings
 - D. Matt Slab
 - E. All of the above

9. What is the function of a footing?

10. Put the following elements for a roof assembly into the correct sequence of construction as it is installed on site: decking, asphalt tiles, underlayment, rafters, batt insulation, metal drip edge, gutter

11. Why is venting a roof with batt insulation important?

12. When applying exterior wood siding to the wall, where does the installer begin?

13. What is the function of the weather resistant barrier applied to the outside of the exterior wall sheathing?

14. What is the ideal sequence of construction of the following building systems: HVAC ductwork, electrical wiring, supply pipes, waste water pipes?

15. When significant insulation is required, does the architect seek a low or a high R value?

16. Describe condensation.

17. What is the function of the vent pipe in the DWV pipe system?

18. 5" of Batt insulation with an R value of 3.5/in is installed in an exterior stud wall. What is the total R value achieved by the batt insulation?

19. Which pipe is largest:

- A. the hot water supply pipe
- B. the cold water supply pipe
- C. the drainpipe
- D. the vent pipe

20. Describe the role of the shim in the installation of a door or window.

21. Sketch a tongue and groove joint.

22. Describe or sketch a thermal bridge.

23. Name two reasons that aluminum is the metal of choice for metal cladding systems:

24. True or False: To this day there is little scientific information on how fireplaces work and how to design them.

25. What is the IBC?

26. What is one function of the damper in fireplace design?

27. What is the name of the structural element of a staircase that supports the risers and treads?

28. The architect must coordinate the _____ opening in the exterior wall construction with the _____ size in the manufacturers' catalog.

29. For a building project in Miami, describe the location of the vapor retarder in the exterior wall relative to the thermal insulation.

30. Sketch a cant strip as part of the assembly in a low slope roof with a parapet.

31. What are the three possible positions of the insulation in a low slope roof assembly?

32. Sketch and label the most typical construction of a steep roof with shingles (include the structure, batt insulation and vapor retarder.)

33. What is the name of the process of drilling a deep hole to investigate the subsurface soil conditions of a building site?

- A. Test Boring
- B. Pile
- C. Caisson
- D. Slurry Wall

34. How is the fire resistance rating of an assembly determined?

35. Does the architect seek a high or low U value when researching windows?

36. An angle can be described 3 different ways. What is the method of describing the angle of the roof?

37. A typical manufacturer requires the membrane of a low slope roof to be turned up at least _____ inches at the parapet to meet the requirements of their warrantee.
38. Three types of glass in regard to strength are tempered glass, annealed glass, and heat strengthened glass. Put these in order from strongest to weakest.
39. To maximize thermal resistance, an aluminum window frame must have this:
40. Spandrel Glass refers to glass in a particular position in a curtain wall relative to the building's structure. Sketch or describe this position relative to the building's structure.
41. Insulating glass panels must have a good seal to prevent _____ inside the airspace.

42. Based on their operation, name four types of windows. (Ex: hopper)

- 1.
- 2.
- 3.
- 4.

43. Masonry veneer curtain walls typically support the veneer on a _____
_____ located at each storey of the building.

44. An exterior wall system that seeks to prevent any penetration of water is called a
_____ wall. An exterior wall system that is built with unsealed joints to
purposely let air pressure equalize between the two sides of the veneer is called a
_____.

45. In general, insulated glazing has a higher, lower, or similar insulating value as a
typical solid insulated exterior wall construction.

46. As the structural frame of a building may not be built plumb, any attachment system
for a curtain wall must permit _____.

47. What is the name for the material/process for closing off any vertical passages or gaps between the floor slab and the exterior curtain wall that could lead to potential flame spread from one floor to the other?

48. Sketch a brick masonry veneer cavity wall section detail with concrete masonry unit backup on a concrete frame structure. Label the above elements and show the typical location of the shelf angle, flashing, weep holes, and insulation in this wall type.

49. Name the opening that the carpenter frames into an exterior stud wall to receive a window.

50. Does the architect seek a high or low U value when researching windows?