

Chapter 5 Test

Name: _____ Date: _____

Directions: Write the correct letter on the blank before each question.

Objective 1:

Identify accepted types of construction building materials and the fire risks associated with them.

- _____ 1. A material that is used in building construction in a nonload-carrying capacity is: (153)
- A. steel.
 - B. wood.
 - C. concrete.
 - D. gypsum board.
- _____ 2. During a fire, the behavior of building materials is affected by their chemical and physical properties and: (154)
- A. initial cost.
 - B. method of fabrication.
 - C. manufacturer markings.
 - D. distance to smoke detection systems.
- _____ 3. Which refers to a rating assigned to an opening in a fire wall to indicate the length of time a protective assembly can withstand fire conditions? (154)
- A. Ignition point
 - B. Flame assignment
 - C. Fire protection rating
 - D. Fire resistance rating
- _____ 4. Which are applied to the surface of combustible materials to suppress, reduce, or delay the flame-spread rating of a material? (154)
- A. Flame inhibitors
 - B. Suppression coverings
 - C. Fire-resistant coatings
 - D. Fire-retardant coatings

- _____ 5. Which construction material used for structural members provides a large amount of fuel for combustion? (154)
- A. Wood
 - B. Steel
 - C. Masonry
 - D. Gypsum board
- _____ 6. Which construction material is required by the International Building Code® to be graded (labeled) to denote its strength? (154)
- A. Glass
 - B. Wood
 - C. Masonry
 - D. Concrete
- _____ 7. Which of the following consists of wood that is prefabricated and shipped to the construction site? (155)
- A. Lumber
 - B. Class II wood products
 - C. Grade B wood products
 - D. Engineered wood products
- _____ 8. Which is an advantage to manufacturing laminated members? (155)
- A. Cost is significantly less than solid wood
 - B. Quality of members does not have to be monitored
 - C. Members have significantly stronger load capacities than solid wood
 - D. Sizes and shapes can be produced that are not available from solid wood
- _____ 9. Which of the following joints hold laminated members together? (156)
- A. Hip joints
 - B. Scarf joints
 - C. Collar joints
 - D. Secondary joints

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- _____ 10. Plywood, oriented strand board (OSB), and nonveneered panels are examples of: (156)
- A. lumber.
 - B. wood panel products.
 - C. combination products.
 - D. secondary wood products.
- _____ 11. Roofs, subflooring, and siding are often constructed from: (156)
- A. gypsum board.
 - B. wood panel products.
 - C. composite fiberboard.
 - D. corrugated fiberboard.
- _____ 12. The two main methods of fire-retardant treatment of wood are pressure impregnation and: (157)
- A. aging.
 - B. dipping.
 - C. surface coating.
 - D. flash treatment.
- _____ 13. Which of the following statements about fire-retardant treatments for wood is MOST accurate? (157)
- A. Treatments only provide protection for 3-5 years.
 - B. Treatments must be reapplied every year for maximum effectiveness.
 - C. Treatments do not affect the structural strength regardless of weather conditions.
 - D. Treatments may adversely affect structural strength as a result of elevated temperature and humidity.
- _____ 14. Which of the following is a challenge for inspectors regarding intumescent coatings? (157)
- A. These coatings contain highly toxic chemicals.
 - B. Occupants use these coatings to avoid other protection.
 - C. These coatings are often painted over or not maintained.
 - D. These coatings provide very limited fire resistance to wood.

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- _____ 15. Which exterior wall material is installed outside the studs to provide structural stability and insulation? (158)
- A. Siding
 - B. Padding
 - C. Sheathing
 - D. Building wrap
- _____ 16. Modern synthetic building wraps are much: (158)
- A. less fire resistant than felt or tar paper.
 - B. more fire resistant than felt or tar paper.
 - C. more prone to degradation than felt or tar paper.
 - D. more expensive and time consuming to install than felt or tar paper.
- _____ 17. Which determines the extent to which foam insulation will increase fire spread within a wood-framed wall? (158)
- A. Air space
 - B. Exterior siding
 - C. Interior fire load
 - D. Temperature differential
- _____ 18. Which type of insulation is gaining popularity and is applied as soft foam that hardens after application? (159)
- A. Cellulose fiber
 - B. Blown-in insulations
 - C. Granulated rock wool
 - D. Solid-fill foam insulations
- _____ 19. Which component is MOST likely to affect fire behavior by ignition due to an exposure fire? (159)
- A. Siding
 - B. Padding
 - C. Sheathing
 - D. Building wrap
- _____ 20. Which of the following statements about siding is MOST accurate? (159)
- A. All siding must be noncombustible.
 - B. All siding is considered combustible.
 - C. Buildings are allowed only one layer of siding.
 - D. Older buildings may have multiple layers of siding.

- _____ 21. Which of the following is an inspector's chief interest in masonry used in construction? (160)
- A. Fencing
 - B. Exterior trim
 - C. Wall construction
 - D. Interior decoration
- _____ 22. Which of the following is a primary concern of mortar joints in masonry units? (161)
- A. They are prone to ignition from exposure fires.
 - B. They are often a place where lower quality materials are used.
 - C. They create air voids allowing fire to travel to interior construction.
 - D. They may deteriorate over time or when exposed to fire and result in weakening of the structure.
- _____ 23. Which type of masonry is produced from a variety of locally available clay and shale? (161)
- A. Brick
 - B. Stone
 - C. Concrete block
 - D. Composite block
- _____ 24. Which construction material is MOST commonly used for foundations, columns, floors, and walls? (163)
- A. Steel
 - B. Masonry
 - C. Concrete
 - D. Composites
- _____ 25. Which of the following is the primary reason that concrete is reinforced through the use of steel bars or cables placed within the concrete? (163)
- A. It reduces the cost and time of installing concrete components.
 - B. It allows the construction to have a higher fire-resistance rating.
 - C. It cannot be used alone where significant tensile forces occur in a structure.
 - D. It allows anchor points to be inserted into the concrete for attachments.

- _____ 26. Which of the following is the strongest of the structural materials used in construction? (164)
- A. Steel
 - B. Wood
 - C. Concrete
 - D. Masonry
- _____ 27. Which of the following is the BEST indicator of deterioration in steel components? (164)
- A. Age
 - B. Rust
 - C. Bowing
 - D. Spalling
- _____ 28. Which of the following MOST impacts the rate at which unprotected steel fails when exposed to fire? (164)
- A. Age of the steel
 - B. Load supported by the steel
 - C. Outside weather conditions
 - D. How the fire was initially ignited
- _____ 29. The most common method of providing fire protection for steel is through: (165)
- A. chemical injection.
 - B. reinforced inner cables.
 - C. the use of intumescent coatings.
 - D. the use of an insulating material.
- _____ 30. Steel floor support systems are frequently protected using a noncombustible ceiling system or a special insulating ceiling tile known as a: (165)
- A. false ceiling.
 - B. curtain ceiling.
 - C. secondary ceiling.
 - D. membrane ceiling.

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- _____ 31. Which type of glass breaks into small granules rather than large, sharp-edged chunks and is used in windows that might be subject to high wind forces? (166)
- A. Laminated
 - B. Fully tempered
 - C. Heat-strengthened
 - D. Single-strength annealed
- _____ 32. When _____ glass is broken, the inner core of vinyl holds the broken pieces of glass in place. (166)
- A. laminated
 - B. fully tempered
 - C. heat-strengthened
 - D. single-strength annealed
- _____ 33. Which glass is MOST likely to be used in security windows and to reduce noise transmission? (166)
- A. Laminated
 - B. Glass block
 - C. Fully tempered
 - D. Heat-strengthened
- _____ 34. Which glass may be used for the protection of limited-size openings in fire-rated walls when permitted by the local building code? (166)
- A. Laminated
 - B. Glass block
 - C. Fully tempered
 - D. Heat-strengthened
- _____ 35. Which of the following is the most common glass used in fire-rated assemblies? (166)
- A. Wired glass
 - B. Fire-rated glass
 - C. Laminated glass
 - D. Triple-layer glass

- _____ 36. Which of the following consists of panels made from a combination of glass and plastic that is used in fire-rated assemblies? (166)
- A. Wired glass
 - B. Fire-rated glass
 - C. Laminated glass
 - D. Triple-layer glass
- _____ 37. Which of the following statements about gypsum board is MOST accurate? (167)
- A. It must be sprayed with a finishing spray for any fire resistive properties.
 - B. It is used mainly for aesthetics and provides little protection to components.
 - C. High water content gives it excellent heat-resistant and fire-retardant properties.
 - D. It breaks down quickly under fire conditions and cannot be used in fire-resistive assemblies.
- _____ 38. Which type of gypsum board is produced with glass fibers that help prevent its deterioration when exposed to fire? (167)
- A. Type A gypsum board
 - B. Type C gypsum board
 - C. Type F gypsum board
 - D. Type X gypsum board
- _____ 39. Which type of gypsum board contains vermiculite that expands as it is exposed to heat and allows the gypsum to maintain its integrity? (167)
- A. Type A gypsum board
 - B. Type C gypsum board
 - C. Type F gypsum board
 - D. Type X gypsum board
- _____ 40. Which type of gypsum board is used to replace the vapor barrier in outside walls? (168)
- A. Type A gypsum board
 - B. Type C gypsum board
 - C. Gypsum backing board
 - D. Foil-backed gypsum board

- _____ 41. Which of the following statements about plastics is MOST accurate? (169)
- A. They are used infrequently in both building exteriors and interiors.
 - B. They are not usually used for structural applications in buildings.
 - C. It is not viable to incorporate or add fire retardants to any plastics.
 - D. The use of plastics has no impact on the fire hazards of a building.
- _____ 42. Plastics in an occupancy add to the amount of fuel and: (169)
- A. decrease likelihood of special fire conditions.
 - B. create smoldering fires not combustion fires.
 - C. interfere with automatic sprinkler performance.
 - D. increase the toxicity of products of combustion.
- _____ 43. Which of the following refers to a material that is installed to reduce the heat rise of the material it is protecting? (170)
- A. Barricade
 - B. Heat block
 - C. Thermal barrier
 - D. Protective curtain
- _____ 44. Exterior insulation and finish systems (EIFS) provide a way to: (170)
- A. eliminate the need for gypsum board in occupancies.
 - B. increase the fire resistance of existing walls and columns.
 - C. inexpensively meet the requirements of many building codes.
 - D. improve the appearance of an existing masonry wall that has become deteriorated.
- _____ 45. Which of the following statements about exterior insulation and finish systems (EIFS) is MOST accurate? (170)
- A. EIFS closely resembles gypsum board.
 - B. EIFS are not addressed by building codes.
 - C. EIFS are fire resistant and difficult to ignite.
 - D. EIFS are flammable and can be ignited from radiant heat.