



2023 Journeyman Code Practice Exam - 100 Question

1. In a Motor Fuel Dispensing Facility, when installed in metallic conduit, underground wiring shall be installed in threaded rigid metal conduit or _____.
 - A. electrical metallic tubing
 - B. rigid poly-vinyl chloride conduit
 - C. auxiliary gutter
 - D. threaded steel intermediate metal conduit
2. Ground clamps or other fittings exposed to physical damage shall be enclosed in _____.
 - A. metal, wood, or equivalent protective covering.
 - B. moisture resistant thermoplastic
 - C. non-conductive thermoplastic
 - D. aluminum foil
3. A 3000 square foot retail store has 30 ft of show windows. There are a total of 100 duplex receptacles and the service is 120/240V, single-phase 3-wire. Calculate the minimum size overcurrent protection for the service.
 - A. 100A
 - B. 125A
 - C. 200A
 - D. 225A
4. For a solidly grounded wye service the ground fault protection system shall operate to cause the service disconnect to open all ungrounded conductors of the fault circuit. The maximum setting of the ground-fault protection shall be _____ amperes, and the maximum time delay shall be one second for ground-fault currents equal to or greater than _____ amperes.
 - A. 800A / 1,000A
 - B. 1,000A / 800A
 - C. 1,000A / 1,200A
 - D. 1,200A / 3,000A
5. In a commercial garage, where an EV charging cord is suspended from overhead, it shall be arranged so that the lowest point of sag is at least _____ above the floor.

- A. 6 inches
 - B. 12 inches
 - C. 30 inches
 - D. 60 inches
6. Conductor ampacity for Alternating Current adjustable voltage motors shall be based on the _____ marked on the motor nameplate.
- A. SSCR rating
 - B. frequency
 - C. maximum operating current
 - D. voltage
7. In an ungrounded 240-volt 3-phase system, an equipment grounding conductor shall be installed with the supply conductors and be connected to the building or structure disconnecting means and to the grounding electrode(s). The grounding electrode(s) shall also be connected to _____.
- A. the building or structure disconnecting means
 - B. the steel of the building
 - C. the concrete slab under the building
 - D. the grounded high-leg of the system
8. If the connection of load is _____ or non automatic, an optional standby system shall have adequate capacity and rating for the supply of all equipment intended to be operated at one time.
- A. automatic
 - B. manual
 - C. dedicated
 - D. portable
9. A disconnecting means shall be provided for all _____ derived from a stationary standby battery with a voltage over 60-volts DC.
- A. grounding conductors
 - B. grounded conductors
 - C. ungrounded and grounded conductors
 - D. ungrounded conductors
10. Fire-resistive cable system cables and conductors shall be surface marked with the suffix _____.
- A. FRCS
 - B. FRS
 - C. FRR
 - D. FRC
11. An installation consists of 15 electric ranges, each rated at 12 kW. According to Table 220.55, what is the maximum demand load for this installation?

- A. 72kW
- B. 63kW
- C. 57.6kW
- D. 30kW

12. In a patient Care Area, metal enclosures containing a receptacle must be connected to a(n) _____.

- A. insulated copper equipment grounding conductor
- B. isolated copper bonding jumper
- C. copper grounding electrode conductor
- D. copper grounded conductor

13. Metal Cable tray can be used as an equipment grounding conductor where _____.

- A. where installed under engineer supervision
- B. installed in dry indoor environments above 8 ft 6 in from the floor
- C. the total length of the installed cable tray does not exceed 150 ft
- D. continuous maintenance and supervision ensure that qualified persons service the installed cable tray system

14. Where buried in masonry or concrete, threadless couplings shall be _____.

- A. the weatherproof type
- B. the concrete tight type
- C. the liquid tight type
- D. direct-burial rated c

15. In Cellular Metal Floor Raceways, junction boxes used with these raceways shall be of metal and shall be _____.

- A. electrically continuous with the raceway
- B. secured with listed straps or supports from the bottom of the enclosure only
- C. secured with listed straps or support from the sides of the enclosure only
- D. protected with a raintight sealing ring, silicone compound, or similar approved means

16. A single-phase motor is using a Dual Element (Time-Delay) Fuse as it's short-circuit and ground-fault protection means. This Dual Element fuse's rating must not-exceed _____ of the motor's Full-Load Current.

- A. 300%
- B. 250%
- C. 175%
- D. 150%

17. What is the minimum size Flexible Metal Conduit (FMC) that can be used to house the following conductors: (1) 1 AWG THHN (2) 2 AWG THHN (2) 4 AWG THHN

- A. 1 inch
- B. 1 ¼ inch
- C. 1 ½ inch
- D. 2 inch

18. What is the minimum size RHW copper tap conductor required to supply a 50A load, if the tap is 9ft from the load.

- A. 10 AWG
- B. 8 AWG
- C. 6 AWG
- D. 4 AWG

19. Transformers whose disconnecting means are located in a remote location, shall be _____.

- A. lockable in the open position
- B. lockable in the closed position
- C. fused
- D. no farther than 125 ft length total from the transformer

20. _____ is NOT permitted to be installed in ducts specifically fabricated to transport environmental air.

- A. Flexible Metallic Tubing Type
- B. MI Cable
- C. Electrical Metallic Tubing
- D. Liquid-Tight Flexible Metal Conduit

21. The Full-Load Current (FLC) of a 100-HP 500 volt DC motor is _____.

- A. 123 A
- B. 148 A
- C. 164 A
- D. 205 A

22. spray paint equipment within the classified areas of membrane enclosures during spray painting, shall be _____.

- A. guarded
- B. grounded
- C. GFCI-protected
- D. AFCI-protected

23. Where more than one piece of X-Ray equipment is operated from the same high-voltage circuit, each piece or each group of equipment as a unit shall be provided with a(n)

_____.

- A. high-voltage switch or equivalent disconnecting means

- B. low voltage disconnect switch
- C. ground-fault detector
- D. lockable disconnect rated at not more than 125% of the equipment FLA rating

24. For a storage warehouse, what portion of the lighting load does a 50% demand factor apply to?

- A. First 10,000 VA
- B. First 12,500 VA
- C. Remainder over 10,000 VA
- D. Remainder over 12,500VA

25. At a high school, the general lighting load shall be calculated at _____ VA per square foot.

- A. 1 ½
- B. 2
- C. 2 ½
- D. 3

26. The minimum cover for a 2" Rigid Nonmetallic Conduit approved for direct burial under an airport runway is _____.

- A. 6 inches
- B. 12 inches
- C. 18 inches
- D. 24 inches

27. The full-load current of a 3-phase 230V, 5HP AC wound-rotor motor is _____.

- A. 22A
- B. 15.2A
- C. 9.6A
- D. 7.6A

28. Electrical wiring for lighting, where installed inside of tents and concessions, shall be securely installed and, where subject to physical damage, shall be provided with _____.

- A. mechanical protection
- B. a means of disconnection within 5 feet of the entrance
- C. steel or rigid PVC conduit protecting conductors
- D. a lockable enclosure for devices controlling illumination

29. A dead end of a busway shall be _____.

- A. accessible
- B. open
- C. inaccessible
- D. closed

30. If FMC is used to connect equipment where flexibility is necessary to minimize the transmission of vibration from equipment or to provide flexibility for equipment that requires movement after installation, a(n) _____ shall be installed.
- A. bonding bushing
 - B. equipment grounding conductor
 - C. a bonding jumper
 - D. a grounding electrode conductor
31. Fire alarm circuits shall be identified _____ in a manner that helps prevent unintentional signals on fire alarm system circuit(s) during testing and servicing of other systems.
- A. at terminal and junction locations
 - B. at the entry point to the Fire System controller
 - C. as power-limited circuits near all pull-stations and alarms
 - D. on every floor of an assembly occupancy
32. If installed for the reduction of electromagnetic interference on the equipment grounding conductor, an isolated ground receptacle's grounding terminal shall be connected to a(n) _____ run with the circuit conductors.
- A. bare equipment grounding conductor
 - B. insulated ungrounded conductor
 - C. insulated equipment grounding conductor
 - D. bonded grounded conductor
33. All 15- and 20A, 125- and 250V non locking-type receptacles in childcare facilities shall be listed tamper resistant receptacles, except in which of the following instances:
- A. where located in preschools and elementary education facilities
 - B. where located in business offices, corridors, waiting room and the like
 - C. where located in dwelling patient care areas
 - D. receptacles located more than 5 1/2 ft above the floor
34. The ampacity of electric pool water heaters shall not be less than _____ of the total nameplate rated load.
- A. 125%
 - B. 115%
 - C. 100%
 - D. 83%
35. What is the maximum allowed 1/0 AWG THHN conductors that can fit in a 1 1/2" EMT conduit?
- A. 3
 - B. 4
 - C. 5
 - D. 7

36. Which of the following outdoor enclosure types are approved for wind-blown dust applications?

- A. 2
- B. 3R
- C. 3RX
- D. 3X

37. A conductor installed on the supply side of a service that ensures the required electrical conductivity between metal parts required to be electrically connected is a:

- A. Supply-side Grounding Conductor
- B. Supply-Side Bonding Jumper
- C. Bonding Conductor
- D. Grounding Electrode Conductor

38. The width of working space in front of electrical equipment shall be the width of the equipment or _____ inches, whichever is greater

- A. 30
- B. 36
- C. 42
- D. 48

39. Underground raceways and cable assemblies entering a hand-hole enclosure shall extend into the enclosure, but they shall not be required to be _____ to the enclosure.

- A. electrically connected
- B. pneumatically connected
- C. tightly connected
- D. mechanically connected

40. Exposed structural metal that is interconnected to form a metal building frame and is not intentionally grounded or bonded and is likely to become energized shall be bonded to a(n) _____.

- A. nonmetallic underground pipe
- B. aluminum busbar attached to wall
- C. grounded conductor at the service
- D. ungrounded conductor

41. For cord-connected equipment a separable connector or a(n) _____ shall be permitted to serve as the disconnecting means.

- A. toggle switch
- B. attachment plug and receptacle
- C. weatherproof cord cap
- D. none of these

42. Switches or circuit breakers _____ disconnect the grounded conductor of a circuit where all circuit conductors are not disconnected simultaneously.
- A. shall not
 - B. shall
 - C. 1000 volts or more shall be permitted to
 - D. shall be permitted to
43. An intersystem bonding termination for connecting intersystem bonding conductors shall be provided _____ enclosures at the service equipment or metering equipment enclosure and at the disconnecting means for any additional buildings or structures.
- A. internal to
 - B. external to
 - C. no closer than 6 ft apart near
 - D. inside each
44. Splicing of the wire-type grounding electrode conductor shall be permitted only by _____ listed as grounding and bonding equipment or by the exothermic welding process.
- A. irreversible compression-type connectors
 - B. a bolt-and-nut termination block
 - C. heat treating fittings
 - D. soldered bolt-and-nut fasteners
45. In damp or wet locations, surface-type meter sockets shall be mounted so as to prevent moisture or water from entering and accumulating within the cabinet or cutout box, and shall be mounted so there is at least _____ inch(es) of airspace between the enclosure and the wall or other supporting surface.
- A. $\frac{1}{8}$
 - B. $\frac{1}{4}$
 - C. $\frac{1}{2}$
 - D. 2
46. A device that, by insertion in a receptacle, establishes a connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle is a(n):
- A. attachment fitting
 - B. charge controller
 - C. controller
 - D. attachment plug
47. GFCI protection shall be installed in the branch circuit supplying underwater luminaires operating at _____.
- A. voltages greater than the low-voltage contact limit
 - B. currents greater than the low-voltage contact limit
 - C. voltages lower than the low-voltage contact limit

D. currents lower than the low-voltage contact limit

48. An incandescent lamp for general use on lighting branch circuits shall not be equipped with a mogul base if rated over _____ watts.

- A. 300
- B. 1000
- C. 1200
- D. 1500

49. The total rating of utilization equipment fastened in place, other than luminaires, shall not exceed _____ of the branch-circuit ampere rating where lighting units, cord-and-plug-connected utilization equipment not fastened in place, or both, are also supplied.

- A. 50%
- B. 80%
- C. 100%
- D. 125%

50. Ceiling outlets, where used exclusively for lighting, shall be required to support a luminaire weighing a minimum of _____ lb.

- A. 23
- B. 25
- C. 50
- D. 75

51. Type SE cable shall be permitted for use where the insulated conductors are used for circuit wiring and the uninsulated conductor is used only for _____ purposes.

- A. supporting
- B. bonding
- C. equipment grounding
- D. listed

52. A 1/0 copper grounding electrode conductor is used for what size ungrounded service- entrance conductors?

- A. Over 350 kcmil – 600 kcmil copper
- B. 2/0 copper - 3/0 copper
- C. Over 3/0 - 350 kcmil copper
- D. Over 600 kcmil through 1100 kcmil

53. In grounded systems the earth _____ considered as an effective ground-fault current path.

- A. shall be permitted to be
- B. shall not be
- C. up to 5 feet from the service shall be permitted to be

D. up to 10 feet from the service shall be permitted to be

54. Which of the following list all standard ampere ratings for fuses and inverse time circuit breakers?

- A. 15A, 20A, 60A, 75A
- B. 20A, 25A, 115A, 155A
- C. 80A, 90A, 350A, 110A
- D. 300A, 400A, 550A, 1000A

55. An insulated grounded conductor of 4 AWG or larger shall be identified by which one of the following means:

- A. A continuous white outer finish
- B. A continuous black outer finish
- C. Three continuous green stripes
- D. None, of the above

56. The rating of any one cord-and-plug-connected utilization equipment not fastened in place shall not exceed _____ percent of the branch-circuit ampere rating.

- A. 80
- B. 83
- C. 100
- D. 125

57. FMC shall not be used _____.

- A. in dry locations
- B. Within 6 ft of the outside edge of a water source
- C. in dwelling unit attic
- D. Underground

58. In _____ locations a flush-mounted switch or circuit breaker shall be equipped with a weather-proof cover.

- A. guarded
- B. damp
- C. dry
- D. isolated

59. A 4" x 2 1/8" x 2 1/8" metal square box, with no devices or clamps installed, shall be allowed to have a maximum of _____ 12 AWG conductors.

- A. 5
- B. 6
- C. 7
- D. 9

60. Exposed, normally non-current-carrying metal parts of fixed equipment supplied by or enclosing conductors or components that are likely to become energized shall be connected to an equipment grounding conductor under which of the following conditions:
- A. If equipment operates with any terminal at over 150V to ground
 - B. Where supplied by a wiring method that provides an ungrounded conductor for short sections of metal enclosures
 - C. Where within 9 ft horizontally of ground or grounded metal objects
 - D. Where located in an isolated wet or damp location
61. An incandescent lamp for general use on lighting branch circuits shall not be equipped with a medium base if rating over _____ watts.
- A. 150
 - B. 200
 - C. 300
 - D. 325
62. The branch-circuit conductor(s) ampacity shall not be less than _____ of the load of fixed electric space-heating equipment and any associated motor(s).
- A. 83%
 - B. 100%
 - C. 125%
 - D. 250%
63. Overhead service conductors, where the voltage does not exceed 150 volts to ground, shall have a minimum clearance of _____ feet from final grade above pedestrian sidewalks.
- A. 10
 - B. 12
 - C. 15
 - D. 18
64. For enclosures in wet locations, raceways entering above the level of uninsulated live parts shall use fittings listed for _____.
- A. Weather-proof use
 - B. Outdoor use Damp
 - C. Locations
 - D. Wet locations
65. Type NM, Type NMC, and Type NMS cables shall be permitted to be used in _____.
- A. commercial kitchens
 - B. one-family dwelling units
 - C. truck refueling stations
 - D. storage battery rooms

66. In a bathroom where receptacles are installed within 6 feet from the top inside edge of the _____, they must be GFCI protected.
- A. counter top
 - B. toilet
 - C. sink faucet
 - D. bowl of the sink
67. Where connected to a branch circuit supplying two or more receptacles or outlets, a 30A receptacle shall not supply a total cord-and-plug connected load in excess of:
- A. 30A
 - B. 25A
 - C. 24A
 - D. 16A
68. A branch-circuit OCPD is a device capable of providing protection for service, feeder, and branch circuits and equipment over the full range of over-currents between its _____ and its interrupting rating.
- A. rated current
 - B. short-circuit
 - C. rated over-current rating
 - D. rated voltage
69. Where a branch circuit supplies continuous loads or any combination of continuous and noncontinuous loads, the rating of the overcurrent device shall not be less than the non-continuous load plus _____ percent of the continuous load.
- A. 83
 - B. 100
 - C. 125
 - D. 200
70. The conductor between the surge arrester and the line, and the surge arrester and the grounding connection shall not be smaller than _____.
- A. 8 AWG Copper
 - B. 6 AWG Copper
 - C. 4 AWG Copper
 - D. 2 AWG Copper
71. Electrical wiring installed in rigid metal conduit (RMC) that is below the surface of a Class I, Division 1 location shall be sealed within _____ feet of the point of emergence above grade.
- A. 3
 - B. 5
 - C. 6

D. 10

72. Determine the motor overload protection for a 25HP, 460V, 3-phase, squirrel-cage motor whose nameplate lists: 32 FLA, Design B, and Service Factor 1.15.

- A. 40A
- B. 50A
- C. 55A
- D. 65A

73. A 75 kVA 3-phase 480V transformer is fed from a 3-phase 200A fused disconnect. The transformer secondary feeds a 3-phase 120/208V panel less than 25 feet away from the transformer. Size the primary overcurrent protective device that must be installed at this panel, assuming no secondary overcurrent protection will be used.

- A. 200A
- B. 225A
- C. 300A
- D. 350A

74. What is the minimum size equipment grounding conductor required for a feeder consisting of (2) 250kcmil THWN-2 conductors protected by a 250A OCPD?

- A. 6 AWG copper
- B. 4 AWG copper
- C. 3 AWG copper
- D. 2 AWG copper

75. Intrinsically safe circuit conductors in grounded metal-sheathed cables where the sheathing or cladding is capable of carrying fault current to ground, shall _____.

- A. not be installed with conductors of a non intrinsically safe circuit
- B. be constructed of a moisture-resistant thermosetting
- C. be permitted to be installed with conductors of a non intrinsically safe circuit.
- D. be constructed of a moisture- and heat-resistant thermoplastic

76. If the generator is installed as a non separately derived system, and overcurrent protection is not integral with the generator assembly, a(n) _____ shall be installed between the generator equipment grounding terminal and the equipment grounding terminal of the disconnecting mean(s).

- A. main bonding jumper
- B. system bonding jumper
- C. grounded conductor
- D. supply-side bonding jumper

77. Open outside branch circuit conductors shall be separated from open conductors of other circuits or systems by not less than:

- A. 3 inches
- B. 4 inches
- C. 6 inches
- D. 8 inches

78. All electrically conductive objects that convey flammable or combustible liquids in spray applications _____.

- A. shall be electrically grounded
- B. shall be protected by a sealable glass or equivalent means that prevents inhalation or physical damage
- C. shall be protected by a ground-fault circuit interrupter at the service equipment
- D. shall be protected by an arc-fault circuit interrupter at the service equipment

79. A(n) _____ shall be permitted to be used in lieu of a box at the end of a rigid metal conduit where the raceway terminates at unenclosed controls or equipment.

- A. connector
- B. coupling
- C. bushing
- D. elbow

80. Motor-generator sets, transformers, rectifiers, rheostats, and similar equipment for the supply or control of current to projection or spotlight equipment shall, where nitrate film is used, be located _____.

- A. below grade
- B. in a separate room
- C. no closer than 25 feet from the storage location of the film
- D. be within 25 ft and line of sight of the film storage location

81. A generator is fed with 250 kcmil copper ungrounded conductors. This generator shall have what sized minimum system bonding jumper?

- A. 6 AWG copper
- B. 4 AWG copper
- C. 2 AWG copper
- D. 1/0 AWG copper

82. For field installed neon secondary conductors over 1000 volts, the length of the secondary circuit conductors from the transformer leads to the first neon tubing electrode shall not exceed _____ where installed in metal conduit or tubing.

- A. 10 feet
- B. 20 feet
- C. 50 feet
- D. 100 feet

83. Fixed equipment above class I locations that may produce arcs or sparks shall be of the _____ type.
- A. totally enclosed
 - B. partially enclosed
 - C. explosion-proof
 - D. weather-proof
84. Which of the following is a permitted wiring method for permanent installations in motion picture and television studios?
- A. nonmetallic raceways exposed on floors
 - B. uninsulated copper wire
 - C. Type MC cable with no equipment grounding conductor
 - D. metal raceways
85. Sheet metal auxiliary gutters shall be supported and secured throughout their entire length at intervals not exceeding _____.
- A. 3 feet
 - B. 5 feet
 - C. 6 feet
 - D. 10 feet
86. Where supplementary overcurrent protection is used for appliances, it _____ as a substitute for required branch-circuit overcurrent devices.
- A. shall not be used
 - B. shall be used
 - C. is required
 - D. is optional
87. A bare 4 AWG compact copper conductor has a diameter of _____.
- A. 0.312 inches
 - B. 0.268 inches
 - C. 0.213 inches
 - D. 0.169 inches
88. Any combustible wall exposed between the edge of a luminaire canopy and an outlet box having a surface area of _____ shall be covered with noncombustible material.
- A. 240 sq-in or more
 - B. 180 sq-in or more
 - C. 120 sq-in or more
 - D. 90 sq-in or more
89. A sign shall be placed at the _____ for other than one- and two-family dwellings that indicates the type and location of each on-site optional standby power source.

- A. nearest building entrance
- B. nearest building exit
- C. top and bottom of common area stairways
- D. service-entrance equipment

90. Resistors and reactors shall have a clearance of not less than _____ from combustible materials.

- A. 24 inches
- B. 12 inches
- C. 8 inches
- D. 6 inches

91. Where the secondary resistor of a wound-rotor AC motor is separate from the controller, and the motor is rated for light intermittent duty, the ampacity of the conductors between controller and resistor shall not be less than:

- A. 85%
- B. 75%
- C. 65%
- D. 55%

92. Where a controller is built in as an integral part of a(n) _____, individual marking of the controller shall not be required if the necessary data are on the nameplate.

- A. motor
- B. x-ray machine
- C. elevator
- D. appliance

93. A space not less than _____ shall be provided between the top of a switchboard and any combustible ceiling.

- A. 3 feet
- B. 4 feet
- C. 5 feet
- D. 6 feet

94. Restricted Access, as it applies to adjustable-trip circuit breakers, shall be defined as located behind:

- A. located behind removable and sealable covers over the adjusting means
- B. located behind bolted equipment enclosure doors
- C. located behind locked doors accessible only to qualified personnel
- D. Any of these

95. Each branch-circuit disconnecting means rated _____ or more and installed on solidly grounded wye electrical systems of more than 150V to ground, but not exceeding 1000V phase-to-phase, shall be provided with ground-fault protection of equipment.

- A. 600A
- B. 800A
- C. 1000A
- D. 1200A

96. The entire space within and under a dispenser pit or containment in a motor fuel dispensing facility is classified as a(n):

- A. Class I Division 1
- B. Class I Division 2
- C. Class II Division 1
- D. Class II Division 2

97. The supply circuit to the mechanical ventilation equipment of charging equipment for an electric vehicle, shall be electrically _____ with the equipment and shall remain energized during the entire electric vehicle charging cycle.

- A. neutral
- B. interlocked
- C. locked out
- D. isolated

98. Where outdoor lamp holders are attached as pendants, the connections to the circuit wires shall be _____.

- A. terminated
- B. isolated
- C. insulated
- D. staggered

99. Cable trays used to support service-entrance conductors shall contain only service-entrance conductors and shall be limited to _____,

- A. staggered
- B. terminated
- C. isolated
- D. insulated

100. Transformers insulated with listed less-flammable liquids that have a fire point of not less than 300°C shall be permitted to be installed in Type I or Type II buildings, in areas where the transformer is rated 45,000 volts or more.

- A. TRUE
- B. FALSE