Continuing Education, For UDC Electrical Inspectors, Commercial Electrical Inspectors, Master Electricians and Journeyman Electricians.

The following test is for Continuing Education Credits for the abovementioned Licenses and Credentials, All answers are found in the 2008 NEC. Please call Brett at (920) 740-4348 with any questions or concerns with this or any other issue you may have.

All questions have a correct answer that can be found in the codebook, when your test is completed read the information at the bottom of the page and send the proper items in to obtain your credit.

Electrical Continuing Ed Test 4

Article 100: Definitions

1 means the current, in amperes, that a conductor can carry continuously under the conditions of use without exceeding its temperature rating.
a. Resistance b. Joule Heating
c. Ampacity d. Current Rating
2 means a generic term for a group of noninflammable synthetic chlorinated hydrocarbons used as electrical insulating media.
a. Askarel b. Plenum c. Mineral Oil d. Regulator
3 means connected to establish electrical continuity and conductivity.
a. Bondingb. Branch Circuitc. Electrically Isolatedd. Insulated Conductor
4 means without live parts exposed to a person on the operating side of the equipment.
a. Double Ended Switchboardb. Disconnecting Meansc. Fusible Switchd. Dead Front
5 means capable of being operated without exposing the operator to contact with live parts.
a. Laterally Operableb. Internally Operablec. Externally Operabled. Linearly Operable
6 means any shaftway, hatchway, well hole, other vertical opening or space in which an elevator or dumbwaiter is designed to operate.
a. Handhole Enclosureb. Nonlinear Loadc. Hoistwayd. Receptacle

7 means a conductor used to connect the system grounded conductor or the equipment to a grounding electrode or to a point on the grounding electrode system.
a. Multiwire Conductorb. Grounding Electrode Conductorc. Macroscopic Conductord. Microscopic Conductor
8 means a device that provides a means for connecting communication system(s) grounding conductor(s) and bonding conductor(s) at the service equipment or at the disconnecting means for buildings or structures by a feeder or branch circuit.
a. Isolated Bonding Terminationb. Insulated Bonding Terminationc. Intrasystem Bonding Terminationd. Intersystem Bonding Termination
9 means energized conductive components.
a. Live Partsb. Overloadc. Overcurrentd. Neutral Conductor
10 means a compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system.
a. Plenumb. Twisted Pairc. Coaxial Cabled. Service Drop
11 means a fuse with provision for the escape of arc gases, liquids, or solid particles to the surrounding atmosphere during circuit interruption.
a. Power Fuse Unitb. Vented Power Fusec. Expulsion Fuse Unitd. Nonvented Power Fuse
12 means constructed or protected so that exposure to the weather will not interfere with successful operation.
a. Watertightb. Airtightc. Weatherproofd. Ventilated

13means complete wiring installations shall be free from short circuits,
ground faults, or any connections to ground other than as required or permitted elsewhere
in this code.
a. Interconnect Technology
b. Circuit Impedance
c. Interrupting Rating
d. Wiring Integrity
14 means parts of electrical equipment that in ordinary operation produce arcs,
sparks, flames, or molten metal shall be enclosed or separated and isolated from all
combustible material.
combustible material.
a. Flash Protection
b. Arcing Parts
c. High Leg Marking
d. Relays
a. Relay 5
15means any electrical circuit that energizes signaling equipment.
a. Show Window
b. Signaling Circuit
c. Service Point
d. Surge Arrester
Article 110: Requirements for Electrical Installations
16. Unless identified for use in the operating environment, no conductors or equipment
shall be located inor locations; where exposed to gases, fumes,
vapors, liquids, or other agents that have a deteriorating effect on the conductors or
equipment; or where exposed to excessive temperatures.
a days acarela d
a. dry; parched
b. dry; wet
c. ground; plenum
d. damp; wet
17. Unused openings shall be closed to afford protection substantially equivalent to the
wall of the equipment other than those intended for:
J. T.
a. the operation of equipment
b. mounting purposes
c. (permitted as part of) the design for listed equipment
d. all of the above

18. Electrical equipment shall be firmly secured to the surface on which it is mounted. driven into holes in masonry, concrete, plaster, or similar materials shall not be used.
a. Wooden Plugsb. Metal Wall Plugsc. Toggle Boltsd. Fiber Plugs
19. Conductors shall be spliced or joined with splicing devices identified for the use or by brazing, welding, or soldering with a metal or alloy.
a. Nonfusibleb. Fusiblec. Similard. Dissimilar
20. The temperature rating associated with the ampacity of a conductor shall be selected and coordinated so as not to exceed the temperature rating of any connected termination, conductor, or device.
a. highest b. lowest c. same d. different
21. Enclosures (other than surrounding fences or walls) of switchboards, panelboards, industrial control panels, motor control centers, meter sockets, and motor controllers, rated not overvolts nominal and intended for such locations, shall be marked with an enclosure-type number as shown in Table 110.20.
a. 600 b. 400 c. 200 d. 100
22. Electrical equipment rooms or enclosures housing electrical apparatus that are controlled by a shall be considered accessible to qualified persons.
a. Key b. Security Device c. Latch d. Lock

23. At leastentrance(s) to enclosures for electrical installations as described in 110.31 not less than 610 mm wide and 2.0 high shall be provided to give access to the working space about electrical equipment.
a. Several b. Two c. Three d. None of the above
24. Each disconnecting means shall be marked to indicate its purpose unless located and arranged so the purpose is evident.
a. boldly b .carefully c. quickly d. legibly
25. Conductors and cables in tunnels shall be located above the tunnel floor and so placed or guarded to protect them from damage.
a. Cold b. Physical c. Heat d. Blunt
26. High-voltage conductors in tunnels shall be installed in:
a. Metal Conduit and Other Metal Racewayb. Type MC Cable or Other Approved Multiconductor Cablec. Both a and bd. None of the above
27. All non-current-carrying metal parts of electrical equipment and all metal raceways and cable sheaths shall be grounded and bonded to all metal pipes and rails at the portal and at intervals not exceeding 300 m throughout the tunnel.
a. Adequatelyb. Stronglyc. Firmlyd. Solidly
28. Enclosures for use inshall be dripproof, weatherproof, or submersible as required by the environmental conditions.
a. Hoistwaysb. Plenumsc. Tunnelsd. Elevators

29. Manhole openings for personnel shall be located where they are not directly above electrical equipment or conductors in the enclosure. Where this is not practicable, either a protective barrier or a fixedshall be provided.
a. Ladder b. Cover c. Vault d. Cable
30. Covers shall be over pounds or other wised designed to require the use of tools to open.
a. 50 b. 75 c. 100 d. 125
31 means utilization equipment, generally other than industrial, that is normally built in standardized sizes or types and is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, and so forth.
a. Machineryb. Devicec. Applianced. All of the above
32 means acceptable to the authority having jurisdiction.
a. Approvedb. Standardizedc. Uniformd. Accredited
33 means 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.
a. Adapter b.Interface c. Attachment Plug d. Receptacle
34means self-acting, operating by its own mechanism when actuated by some impersonal influence, as, for example, a change in current, pressure, temperature, or mechanical configuration.
a. Mechanicalb. Automaticc. Programmedd. Voluntary

35means a reliable conductor to ensure the required electrical conductivity between metal parts required to be electrically connected.
a. Equipment Grounding Conductorb. Stingersc. Bonding Jumperd. None of the above
36means the circuit conductors between the final overcurrent device protecting the circuit and the outlet (s).
a. Branch Circuitb. Simple Series Circuitc. Parallel Circuitd. Combination Circuit
37means a branch circuit that supplies two or more receptacles or outlets for lighting and appliances.
a. Branch Circuit, Multiwireb. Branch Circuit, General-Purposec. Branch Circuit, Individuald. Branch Circuit, Appliance
38 means a device designed to open and close a circuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without damage to itself when properly applied within its rating.
a. Short Circuitb. Switchgearc. Fused. Circuit Breaker
39. The automatic opening means can be integral, direct acting with the circuit breaker, or remote from the circuit breaker.
a. True b. False
40. (As applied to circuit breakers)means a qualifying term indicating that no delay is purposely introduced in the tripping action of the circuit breaker.
a. Adjustableb. Instantaneous Tripc. Inverse Timed. Nonadjustable

41means rendered inaccessible by the structure or finish of the building.
a. Covered
b. Exposed
c. Concealed
d. Enclosed
42means a conductor encased within material of composition or thickness that is not recognized by this Code as electrical insulation.
a. Bare Conductor
b. Insulated Conductor
c. Covered Conductor
d. None of the above
43means a separate portion of a conduit or tubing system that provides access through a removable cover (s) to the interior of the system at a junction of two or more sections of the system or at a terminal point of the system.
a. Conduit Body
b. Equipment Grounding Conductor
c. Box Conductors
d. Piping System
44means a device that establishes a connection between two or more conductors or between one or more conductors and a terminal by means of mechanical pressure and without the use of solder.
a. Ground Fault Circuit Interrupter
b. Transformer
c. Receptacle
d. Pressure Conductor (Solderless)
45means a load where the maximum current is expected to continue for 3 hours or more.
a. Gable Endwall b. Non-continuous Load c. Continuous Load d. Truss Bracing
46means a device or group of devices that serves to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected.
a. Speed Controllerb. Controllerc. Alternative Drive Systemsd. None of the above

47means localization of an overcurrent condition to restrict outages to the circuit or equipment affected, accomplished by the choice of overcurrent protective devices and their ratings or settings.
a. Arc Flash Protectionb. Coordination (Selective)c. Branch Breaker Combinationd. Load Side Fault Current
48means conductors drawn from a copper-clad aluminum rod with the copper metallurgically bonded to an aluminum core.
a. Insulatorsb. Semiconductorsc. Iron Conductorsd. Copper-Clad Aluminum Conductors
49 means an enclosure designed for surface mounting that has swinging doors or covers secured directly to and telescoping with the walls of the box proper.
a. Cutout Box b. Junction Box c. Outlet Box d. None of the above
50 means the ratio of the maximum demand of a system, or part of a system, to the total connected load of a system or the part of the system under consideration.
a. Real Powerb. Demand Factorc. Entire Loadd. All of the above
51means a unit of an electrical system that carries or controls electric energy as its principle function.
a. Device b. Transformer c. Mutual Induction d. Current
52means a device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.
a. Disconnectb. Power Supplyc. Main Disconnectd. Disconnecting Means

53means operation at a substantially constant load for an indefinitely long time.
a. Intermittent Dutyb. Periodic Dutyc. Continuous Dutyd. Short-Time Duty
54means power production, distribution, and utilization equipment and facilities, such as electric utility systems that deliver electric power to the connected loads, that are external to and not controlled by an interactive system.
 a. Electricity Generation b. Electromechanical <u>Generators</u> c. Distributed Generation d. Electric Power Production and Distribution Network
55means electrically connected to, or is, a source of voltage.
a. De-energizedb. Energizedc. Dead Frontd. Electrical Hazard
56means all circuit conductors between the service equipment, the source of a separately derived system, or other power supply source and the final branch-circuit overcurrent device.
a. Feederb. Feeder Wiresc. Feeder Piped. Branch Circuit Wires
57means a string of outdoor lights that is suspended between two points.
a. Cable Harnessb. Lampholderc. Festoon Lightingd. Rigid Lighting
58means an accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.
a. Clipsal Fittingb. Main Switchc. Fittingd. Conduit

59 means connected to ground or to a conductive body that extends the ground connection.
a. Electrical Circuitb. Securely Bondedc. Earthingd. Grounded
60 means a conducting object through which a direct connection to earth is established.
a. Grounding Electrodeb. Guardedc. Grounded Conductord. Ground Fault
61 means an electric power production system that is operating in parallel with and capable of delivering energy to an electric primary source supply system.
a. Syntellect Interactive Serviceb. Utility Outage Tracking Systemc. Power System Coordinationd. Interactive System
62means a complete lighting unit consisting of a light source such as a lamp or lamps, together with the parts designed to position the light source and connect it to the power supply.
a. Lampholderb. Ballastc. Light sourced. Luminaire
63 means an assembly of one or more enclosed sections having a common power bus and principally containing motor control units.
a. Manual Meansb. Motor Control Centerc. Automatic Meansd. Contactor
64means a type of surface, flush, or freestanding raceway designed to hold conductors and receptacles, assembled in the field or at the factory.
a. Raceway Assemblyb. Surge Protectorc. Multioutlet Assemblyd. Circuit Tester

65 means the conductor connected to the neutral point of a system that is
intended to carry current under normal conditions.
a. Neutral Point
b. Neutral Conductor
c. Resistor
d. None of the above
66means action requiring personal intervention for its control.
a. Voluntary
b. Manual
c. Preset
d. Nonautomatic
67 means a load where the wave shape of the steady-state current does not follow the wave shape of the applied voltage.
a. Linear Load
b. Total Load
c. Nonlinear Load
d. Running Load
68 means any current in excess of the rated current of equipment or the ampacity of a conductor.
a. Overload
b. Excess Current
c. Short Circuit
d. Overcurrent
d. Overedirent
69 means a contact device installed at the outlet for the connection of an attachment plug.
a. Receptacle outlet
b. Receptacle
c. Three-wire receptacle
d. Faceplate
70means any electrical circuit that controls any other circuit through a relay or
an equivalent device.
a. Bridge Circuit
b. Remote- Control Circuit
c. Branch Circuit
d. Alarm Circuit

electric energy or equipment other than a service.
a. Serviceb. Sealable Equipmentc. Separately Derived Systemd. None of the above
72means the point of connection between the facilities of the serving utility and the premises wiring.
a. Point of Attachmentb. Service Pointc. Service Dropd. Service Connection
73 means the total components and subsystems that, in combination, convert solar energy into electric energy suitable for connection to a utilization load.
a. Integrated Photovoltaic Systemb. Photovoltaic Power Stationsc. Photovoltaic Power Plantd. Solar Photovoltaic System
74 means a switch rated in horsepower that is capable of interrupting the maximum operating overload current of a motor of the same horsepower rating as the switch at the rated voltage.
a. Bypass Isolation Switchb. General Use Switchc. Isolating Switchd. Motor-Circuit Switch
75 means an inverter intended for use in parallel with an electric utility to supply common loads that may deliver power to the utility.
a. Static Power Inverterb. Utility-Interactive Inverterc. Alternative Energy Solutionsd. Renewable Energy
76 means equipment that utilizes electric energy for electronic, electromechanical, chemical, heating, lighting, or similar purposes.
a. Utilization Equipmentb. Power Distribution Systemc. Grounding Deviced. Circuit Protection Equipment

is heated and severed by the passage of overcurrent through it.
a. Breaking Capacityb. Circuitc. Fused. Voltage Drop
78means a fuse without intentional provision for the escape of arc gases, liquids, or solid particles to the atmosphere during circuit interruption.
a. Controlled Vented Power Fuseb. Expulsion Fuse Unitc. Nonvented Power Fused. Power Fuse Unit
79means an assembly of two or more single-pole fuses.
a. Surface Mount Fuseb. Multiple Fusec. Semi-enclosed Fused. Time Delayed Fuse
80 means a device designed to close, open, or both, one or more electrical circuits.
a. Actuator b. Contact c. Switching Device d. Multi-throw Switch
Article 200: Use and Identification of Grounded Conductors
81. The continuity of a conductor shall not depend on a connection to a metallic enclosure, raceway, or cable armor.
a. Superb. Semic. Insulatedd. Grounded
82. An insulated grounded conductor larger than 6 AWG shall be identified by one of the following means EXCEPT:
a. By a continuous white or gray outer finish.b. By a broken white or gray outer finish.c. By three continuous white stripes along its entire length on other than green insulation.d. At the time of installation, by a distinctive while or gray marking at its terminations.

83. The identification of terminals to which a grounded conductor is to be connected shall be substantiallyin color.
a. Void
b. Gray
c. White
d. Different
84. For devices with screw shells, the terminal for the grounded conductor shall be the one to the screw shell.
a. Unrelated
b. Disconnected
c. Connected
d. Isolated
Article 210: Branch Circuits
85. No grounded conductor shall be attached to any terminal or lead so as to the designated polarity.
a. Reverseb. Invalidatec. Canceld. Carry Out
86. Each multiwire branch circuit shall be provided with a means that will simultaneously disconnect all ungrounded connectors at the point where the branch circuits
a. Integratesb. Terminatesc. Extendsd. Originates
G. G
87. Where the premises wiring system has branch circuits supplied from more than one nominal voltage system, each ungrounded conductor of a branch circuit shall be identified by phase or line and system at all points.
a. Terminationb. Connectionc. Splice
d. All of the above
88. In dwelling units and guest rooms or guest suites of hotels, motels, and similar occupancies, the voltage shall not exceed 120 volts, nominal, between conductors that supply the terminals of the following:
a. Luminaires b. Cord-and-plug connected loads 1440 volt-amperes, nominal, or less or less than ¼ hp c. Emergency Transfer Cabinet d. Both a and b

89. Branch circuits shall not be derived from unless the circuit supplied has a grounded conductor that is electrically connected to a grounded conductor of the system supplying the
a. Autotransformers
b. Audio impedance-matching transformer
c. Step regulators
d. Inductive voltage divider circuit
90. The minimum number of branch circuits shall be determined from the total
and the size or rating of the circuits used.
a. Calculated load

- b. Ampere rating
 c. Branch-circuit load
 d. Volt-ampere

Electrical Continuing Ed Test 4 Answer Sheet Circle or Mark the Correct Answer

1.	a	b c d	49.	a	b c d
2.	a	b c d	50.	a	b c d
3.	a	b c d	51.	a	b c d
4.	a	b c d	52.	a	b c d
5.	a	b c d	53.	a	b c d
6.	a	b c d	54.	a	b c d
7.	a	b c d	55.	a	b c d
8.	a	b c d	56.	a	b c d
9.	a	b c d	57.	a	b c d
10.	a	b c d	58.	a	b c d
11.	a	b c d	59.	a	b c d
12.	a	b c d	60.	a	b c d
13.	a	b c d	61.	a	b c d
14.	a	b c d	62.	a	b c d
15.	a	b c d	63.	a	b c d
16.	a	b c d	64.	a	b c d
17.	a	b c d	65.	a	b c d
18.	a	b c d	66.	a	bcd
19.	a	b c d	67.	a	bcd
20.	a	b c d	68.	a	b c d
21.	a	bcd	69.	a	bcd
22.	a	b c d	70.	a	bcd
23.		bcd	70. 71.		bcd
24.	a	bcd	71. 72.	a	bcd
2 4 . 25.	a		72. 73.	a	
25. 26.	a		73. 74.	a	
	a	b c d		a	bcd
27.	a	b c d	75.	a	bcd
28.	a	b c d	76.	a	bcd
29.	a	b c d	77.	a	bcd
30.	a	b c d	78.	a	bcd
31.	a	b c d	79.	a	bcd
32.	a	b c d	80.	a	bcd
33.	a	b c d	81.	a	b c d
34.	a	b c d	82.	a	b c d
35.	a	b c d	83.	a	b c d
36.	a	b c d	84.	a	b c d
37.	a	b c d	85.	a	b c d
38.	a	b c d	86.	a	b c d
39.	a	b c d	87.	a	b c d
40.	a	b c d	88.	a	b c d
41.	a	b c d	89.	a	b c d
42.	a	b c d	90.	a	b c d
43.	a	b c d			
44.	a	b c d			
45.	a	b c d			
46.	a	b c d			
47.	a	b c d			
48.	a	b c d			

Name and Credential Number Date

To obtain your WI continuing education credits follow the below instructions.

- 1. If taking the same quiz more than once per cycle, fill out the forms with different dates.
- 2. Fill in all fields applicable.
- 3. Include your credential or license number.
- 4. We take care of registering with the state and mailing back the test results.

FYI: The state allows a person to take the same course more than once (several times) per cycle.

Send by mail

- 1. Test answer sheets, fee, and the following form.
- 2. Fill out this form below completely.
- 3. Make check or Money Order to Brett Or Kathy Ward
- 4. Mail to: Yourwicontinuinged.com P.O. Box 36 Kaukauna WI 54130.

Questions call: 920-740-4348

Attandaa'a Nama		
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		Date
Instructor Signature		