PHILIPPINE ELECTRICAL CODE

1.Surrounded by a case, housing, fence, or walls that prevent from accidentally contacting energized part is ENCLOSED.

2.ISOLATED means that equipment is not readily accessible to persons unless special means for access are used.

3.load and no load; or (2) load and rest; or load, no load and rest is called INTERMITTENT duty.

4.An electrical outlet constructed so that moisture will not enter the enclosure is classified as being WATERTIGHT.

5.The AMPACITY is the current in amperes a conductor can carry continuously under the conditions of use without exceeding its temperature rating.

6.Encased with a material or composition or thickness that is not recognized by the code as electrical insulation is defined as a COVERED CONDUCTOR.

7.Covered, shielded, fenced or enclosed by means of suitable covers, casings, barriers, rails, screens, mats, or platforms is the definition of GUARDED.

8.The overhead service conductors from the last pole or other aerial support to and including the splices, if any, connecting to the service entrance conductors at the building or other structure is the

SERVICE DROP.

9.Interior locations protected from weather but subject to moderate degree of moisture, such as basements, some bars, some cold-storage warehouses and the like, the partially protected locations under canopies, marquees, roofed open porches, and the like, shall be

required fixtures marked “suitable for DAMP locations”.

10.A fitting is PART OF THE WIRING SYSTEM THAT ISINTENDED PRIMARILY TO PERFORM A MECHANICALFUNCTION.

11.Without live parts exposed to a person on the operating side of the equipment is called DEADFRONT.

12.A conductor encased within material of composition or thickness not recognized by the code is a

COVERED conductor.

13.WEATHERPROOF means so constructed or protected that exposure to the weather will not interfere with its successful operation.

14.The definition of automatic self-acting, operating by its own mechanism when actuated by some impersonal influence such as A CHANGE IN CURRENTSTRENGTH, TEMPERATURE, AND MECHANICALCONFIGURATION.

15.Only wiring methods recognized as SUITABLE areincluded in the code.

16.An accessible conductor is NOT PERMANENTLYENCLOSED BY A STRUCTURE.

17.The definition of ambient temperature is THETEMPERATURE OF THE AREA SURROUNDING THECONDUCTOR

18.ACOVERED conductor is one having one or more layers of non-conducting materials that are not recognized as an electrical insulation.

19.The definition of a dry location IS NOT NORMALLYSUBJECTED TO DAMPNESS, NOT NORMALLYSUBJECTED TO WETNESS, AND MAY BETEMPORARILY SUBJECTED TO WETNESS.

20.VARYING duty is a type of service where both the load and the time intervals may have wide variations.

21.A requirement of service that demands operation for alternate intervals of (1) load and no load; or (2) load and rest; or load, no-load and rest is Calle INTERMITTEN duty.

22.Continuous load is A LOAD WHERE THE MAXIMUMCURRENT IS EXPECTED TO CONTINUE FOR THREEHOURS OR MORE.

23.Concealed is MADE INACCESIBLE BY THE STRUCTUREOR FINISH OF THE BUILDING

24.GROUNDED CONDUCTOR is a system or circuit conductor that is intentionally grounded.

25.Approved is ACCEPTABLE TO THE AUTHORITYHAVING JURISDICTION

26.A system which will automatically furnish lighting and/or power to specified areas and/or equipment when there is a failure of the normal supply is known as a EMERGENCY system.

27.An isolating switch which is one that is INTENDEDFOR CUTTING OFF AN ELECTRICAL CIRCUIT FROM ITSSOURCE OF POWER

28.In an electric mixer intended for travelling in and out of an open mixing tank shall be considered

PORTABLE utilization equipment.

29.An assembly that has concealed parts from process of manufacturing and cannot be inspected before being installed at a building site without disassembly, damage, or destruction, is a definition of

CLOSEDCONSTRUCTION.

30.An INTEGRATED ELECTRICAL SYSTEM is a unitized segment of an industrial wiring system in which orderly shutdown is necessary to ensure safe operation.

31.OFFSET is the distance measured along the enclosure wall from the axis of the centerline of the terminal toa line passing through the opening in the enclosure.

32.The definition of a bathroom is an area including a SLIDING GLASS DOOR

with one or more of the following; a toilet, a tub, or a shower.

33.COVER is defined as the shortest distance measured between a point on the top surface of any direct buried conductor, cable, conduit, or other raceway and the top surface of the finished grade.

34.INTERLOCK is a device actuated by the operation of some other device with which it is directly associated, to govern succeeding operations of the same or allied devices.

35.Electrical plans and drawings shall be drawn on sheets of the standard sizes 760mm x 1,000mm,600mm x 900mm, and 500mm x 760mm except

760mm x 900mm.

36.Connection by means of wire binding screws or studs and nuts having upturned lugs or equivalent shall be permitted for 5.5mm 2 or smaller conductors.

37.1:100 scale shall be used for floor/deck and riser/profile plans.

38.Title block or nameplate of plans and drawings shall be a standard strip of 40 mm high.

39.If potentials exceeding 600 volts are employed, a permanent warning sign shall be displayed inconspicuous places forbidding anyone to work on energized equipment or circuit.

40.At least 1 entrance of sufficient area shall be provided to give access to the working space about electrical equipment.

41.For equipment rated 1200 amperes or more and over1900mm wide containing overcurrent devices, switching devices or control devices, there shall bone entrance not less than 600mm wide and 2000mm high at each end.

42.1 entrance to the working space is required where the required work space is doubled.

43.In all cases, where there are energized parts normally exposed on the front of switchboards, or motor control centers, the working space in front of such equipment shall not be less than 1000mm.

44.1900mm is the minimum headroom of working spaces about service equipment, switchboard, panelboard, or motor control circuits.

45.500,000is the insulation resistance for circuits of 2.0mm 2 or 3.5mm 2 conductors.

46.A wall, screen or fence less than 2500mm in height shall not be considered as preventing access.

47.A minimum working space of 800 horizontally shall be provided where rear access is required to work on deenergized parts on the back of enclosed equipment.

48.Illumination shall be provided for all working spaces about service equipment, switchboards, etc. installed indoors except service equipment's, panelboards indwelling units that do not exceed 200amperes.

49.Energized parts of electrical equipment operating at50 volts or more shall be guard against accidental by having it elevated 2500mm above the floor or other working surface.

50.1.0 meg-ohm per thousand volts or fraction thereof is the minimum insulation resistance for voltage above600 volts.

51.In all cases the workspace about equipment shall be adequate to permit at least a

90˚degree opening of doors or hinged panel.

52.KEPT LOCKED the entrances to all buildings, rooms, or enclosure containing exposed energized parts or exposed conductors operating over 600 volts.

on the neutral conductor shall be considered as

70

percent of the load on the ungrounded conductors.185.

The size of branch-circuit conductors, andovercurrent protective devices for electrode-typeboilers shall be calculated on the basis of

125

percentof the total load (motor not included).186.

In a dwelling the code requires a minimum of

ONE 20AMP CIRCUITS FOR THE SMALL APPLIANCE CIRCUIT

,

ONE 20 AMP CIRCUIT FOR LAUNDRY

AND

ONE 20AMP CIRCUIT FOR THE BATHROOM

.187.

The feeder for six 20 amp receptacles supplying shorepower shall be calculated at

90

percent of the sum ofthe rating of the receptacles.188.

When determining the load on the “volt

-amps per

square meter” basis, the floor area shall be computed

from the

OUTSIDE

dimensions of the building.189.

Branch circuits for heating and air conditioningequipment located on the elevator car shall not havea circuit voltage in excess of

600

volts.190.

The maximum overcurrent device on a branch circuitsupplying a ASME rated boiler is

150

amps.191.

For nondwelling units, it is permitted to use a

40%

demand factor for that portion of a receptacle loadthat exceeds 10 kVa.192.

Where two or more single-phase ranges are suppliedby a 3-phase, 4-wire feeder, the total load shall becomputed on the basis of

TWICE THE

maximumnumber connected between any two phases.193.

A separate branch circuit shall supply the

CAR LIGHTS

receptacles, auxiliary power source, and ventilationon each elevator car.194.

Branch circuit conductors shall have an ampacity notless than

100% OF THE LOAD TO BE SERVED

.

195.

For an installation consisting of not more than two-wire branch circuits, the service disconnecting meansshall have a rating of not less than

30

amperes.

196.

To qualify as a lightning and appliance branch circuitpanelboard, the number of circuits rated 30 amperesor less with neutrals must be

MORE THAN 10%.

197.

35 amperes

is not a standard classification for abranch circuit supplying several loads. The standardsare 20, 30, and 50 amperes.

198.

Branch circuit larger than

50

amperes shall supplynon-lightning outlet loads.

199.

In dwelling units, a multiwire branch circuit supplyinga split-wired receptacle is required to

HAVE APROVISION AT THE SOURCE TO SIMULTANEOUSLYDISCONNECT ALL GROUNDED CONDUCTORS

.

200.

A heavy lampholder shall have a rating of not lessthan

660

watts if the admedium type and not lessthan

750

watts if of any other type.

201.

Appliance receptacle outlets shall be installed within

1800

mm in the intended location of the appliance.

202.

A wall space include any space

600

mm or more inwidth and unbroken along the floorline by doorways,fireplaces and similar opening.203.

Receptacles outlets in floors shall not be counted aspart of the required number of receptacle outletsunless located within

450

mm of the wall.204.

A receptacle outlet shall be installed at each wallcounter space that is

300

mm or wider.205.

At least one receptacle outlet shall be installed ateach island counterspace with a long dimension of

600

mm or greater and a short dimension of

300

mmor greater.206.

Receptacles outlets shall be located above, but notmore than

450

mm above the countertop.207.

In dwelling units , at least one receptacle outlet shallbe installed in bathrooms within

900

mm of theoutside edge of each basis.208.

For a one-family dwelling and each unit of two-familydwelling that is at grade level, at least one receptacleoutlet accessible at grade level and not more than

2000

mm above grade shall be installed at the frontand back of the dwelling.209.

In dwelling units hallways of

3000

mm or more inlength shall have at least one receptacle outlet.210.

Heating, air-conditioning, and refrigerationequipment receptacle outlet shall be installed andlocated on the same level and within

7600

mm of theequipment.211.

The feeder conductor ampacity shall not be less thanof the service entrance conductor where the feederconductors carry the total load supplied by the

service entrance conduction with an ampacity of

55 A

or less.212.

Where the computations in branch circuit, feeder,and service calculations result in a fraction of anampere

0.50

or larger such fractions shall bepermitted to be dropped.213.

Outlets for heavy-duty lampholders shall becomputed at a minimum of

600

volt-amperes.214.

In dwelling units, for lightning load over 120000 volt-amperes the demand factor applied should be

25

percent.215.

Sign and outline lightning outlets shall be computedat a minimum of

1200

volt-amperes for each requiredbranch circuit.216.

Show windows shall be computed at 600 volt-amperes per linear meter.217.

In dwelling units, for the first

3000

volt-ampere orless of lightning load, the demand factor appliedshould be 100 percent.========== 4/1/11218.

For nondwelling receptacle loads a demand factor of100% is applied for the first 10kVA or less and

50

forthe remainder over 10kVA.219.

Fixed electric heating space heating shall becomputed at

100

percent of the total connected load.220.

In each dwelling unit small appliance circuit load shallbe computed at

1500

volt-amperes for each 2-wiresmall aplliance branch circuit.221.

For appliance load in dwelling units it shall bepermissible to apply a demand factor for

75

percentto the nameplate rating of four or more appliancesfastened in places.222.

70%

is the demand factor for six electric clothes dryertotal demand load.223.

Services using copper conductors shall have sufficientcapacity and shall not be smaller than

8.0 mm

2

.224.

Conductors must have a clearance from windows,porches, fire escapes of not less than

1000 mm

.225.

FOR AIR CONDITIONER AND WATER HEATERS

is notan exception on the code provisions that a buildingserved shall be supplied by only one set of servicedrop.226.

SUBSET

of service entrance conductors are taps fromthe main service conductors run to serviceequipments.227.

Two or more services shall be permitted where thecapacity are in excess of

2000

amperes at a supplyvoltage of 600 volts or less.228.

SERVICE DROP

is the underground service conductorsbetween the street main and the first point ofconnection to the service entrance conductor in aterminal box.229.

Underground sets of conductors, size

50

mm

2

orlarger running to the same location and connectedtogether at their supply end but not connectedtogether at their load end shall be considered to beone service lateral.230.

For services not over 600 volts nominal serviceconductors shall have a vertical clearance of

2500

mm from the roof surface.231.

Where the voltage between conductors does notexceed 300 volts, and the roof has a slope of not lessthan 00 mm in 300 mm, a reduction of clearance to

1000

mm shall be permitted.232.

Service drop conductors passing over a roof of abuilding shall be securely supported by substantialstructures. Where practicable, such supports shall be

INDEPENDENT

of the building.233.

Service drop conductors where not in excess of 600volts nominal, shall have a vertical clearance of

3100

.234.

Service drop conductors where not in excess of 600volts nominal, shall have a vertical clearance of

4600

mm above residential property and driveways andthose commercial areas not subject to truck traffic.235.

Service drop conductors where voltage is limited to600 volts to ground shall have a vertical clearance of

3700

mm over residential property and driveways

and those commercial areas not subject to trucktraffic.236.

Service drop conductors where not in excess of 600volts nominal, shall have a vertical clearance of

5500

mm over public streets, parking areas subject totraffic, and driveway on other than a residentialareas.237.

MAST

is a column pole or narrow base structure ofwood, steel or other material supporting overheadconductors by means of arms or bracket.238.

The minimum size of the underground service lateralconductors shall be

5.5

mm

2

copper of

8.0

mm

2

aluminum or copper clad aluminum.239.

Service entrance cables that are not approved formounting in contact with a building shall be mountedon insulating supports installed at interval exceeding

4500

mm and in such a manner than

50

mm from thesurface over which they pass.240.

For service exceeding 600 volts nominal serviceentrance conductors shall not be smaller than

8.0

mm

2

unless in cable.241.

Underground service-entrance conductors shall havean ampacity of not less than

100

amperes for one-family dwelling with six or more 2-wire branchcircuits.242.

for installations to supply only limited loads of asingle branch circuit, the service disconnecting meansshall have a rating not less than

15

amperes.243.

Service entrance cables shall be supported by trapsand other approved means within

360

mm of everyservice head, gooseneck, or connection to a racewayor enclosure at intervals not exceeding

760

mm.244.

For installations consisting of not more than two 2-wire branch circuits, the service disconnecting meansshall have a rating of not less than

30

amperes.245.

For one-family dwelling the service disconnectingmeans shall have a rating of not less than

100

amperes.246.

Where individual open conductors enter a building orother structure through tubes,

DRIP LOOPS

shall beformed on the conductors before they enter thetubes.247.

The service disconnecting means shall be

READILYACCESSIBLE

.248.

For services, exceeding 600 volts nominal entranceconductors in cable shall not be smaller than

5.5mm

2

.249.

Service cables shall be formed in a gooseneck andtaped and painted or taped with a self-sealing,weather-resistant

THERMOPLASTIC

.250.

SERVICE DROP

is the overhead service conductorsfrom the last pole or aerial support to and includingthe splices, if any connecting to the service entranceconductors at the building or other structure.251.

Where the raceway-type service masts are used, allraceway fitting shall be

IDENTIFIED

for use withservice masts.252.

OVERHEAD SERVICE CONDUCTORS

shall not beinstalled beneath opening through which materialmay be moved. Such openings in farm andcommercial buildings and shall not be installed wherethey will obstruct entrance to these buildingopenings.253.

Where two to six service disconnecting means inseparate enclosure grouped at one location andsupply separate loads from one service drop or lateral

ONE

set of service-entrance conductors shall bepermitted to supply each or several such serviceequipment enclosures.254.

Wiring methods permitted for service conductorsinclude

ELECTRICAL METALLIC TUBING

.255.

Service-drop conductors and service-entranceconductors shall be arranged so that

WATER

will notenter service raceway or equipment.256.

Each service disconnecting means shall be suitable for

THE PREVAILING CONDITIONS

.257.

Where individual open conductors are exposed to

THE WEATHER

, the conductors shall be mounted oninsulator or on insulating supports attached to rack,brackets, or other approved means.

1586. Main contact conductors used in connection withcrane or hoists shall be supported on insulating supportsplaced at internals not exceeding

6000

mm.1587. Conductors of control circuits in connection withcrane and hoist shall be protected by over current devicesthat are rated or set at not more than

300

percent of theampacity of the control conductors.1588. All exposed parts of cranes, hoist, and accessoriesshall

be metallically joined together

into a continuouselectrical conductor.1589. Remote crane or hoist controls that may introducehazardous electrical conditions into the cell line workingzone shall employ one or more of the following system

isolated and ungrounded control circuit in accordancewith section 668-21 (a)., nonconductive rope operator,ratio

.1590. Hoist way is a

shaft way, batch way, well hole

inwhich an elevator or dumbwaiter is designed to operate.1591. In motor load calculation on cranes and hoists, if thenumber of cranes or hour is 4, the demand factor is

0.87

.1592. The dimension of two working space in the directionof access to energized parts which requires examination,adjustment, servicing or maintenance while energizedshall be a minimum of

760

mm.1593. A crane has two motors one rated at 106 amperesfor 30 minutes and the other rated 72 amperes for 60minutes. The minimum calculated motor load for the twomotors is

142

amperes.

ELEVATORS, DUMBWAITERS, ESCALATORS MOVINGWALKS, WHEELCHAIR LIFTS AND STIARWAY CHAIR LIFTS

1594. The nominal voltage used for elevators, escalators,dumbwaiters and moving walk for operating control,signaling circuits and related equipment including dooroperator motors shall not exceed

300

volts.1595. The nominal voltage used for elevators,dumbwaiters, escalators and moving walk operatingdriving machine motors, machine brakes, and motorgenerator sets shall not exceed

600

volts.1596. The conductors installed in connection with electors,dumbwaiters, escalators, and moving walks shall be flameretardant and suitable for a temperature of not less than

200

degree c.1597. The minimum size of conductors used for elevators,dumbwaiters, escalators and moving walk wiring shall be

2.0

mm2 for lighting circuits and

0.50

mm2 for operatingcontrol and signaling circuits.1598. In connection with elevators, dumbwaiters,escalators, and moving walks, installation of conductors inlocations where raceways from the floor and terminate inother than a wiring enclosure, they shall extend at least

150

mm.1599. Duty on escalator motors shall be classed as

continuous

.1600. The sum of the cross-sectional area of the individualconductors in a wire way used in connection withelevators, dumbwaiters, escalators, and moving walk shallnot be more than

50

percent of the interior cross-sectionalarea of the wire way.1601. The sum of the cross-sectional area of the operatingand control circuit conductors in a raceway used inconnection with elevators, dumbwaiters, escalators, andmoving walks shall not exceed

40

percent of the interiorcross-sectional area of the raceway.

ELECTRIC WELDERS

1602. Each welder shall have over current protection ratedor set at not more than

300

percent of the rated primarycurrent of the welders.1603. For arc welders, each shall have over current ratedor set at not more than

200

of Imax.1604. If the supply conductors for a resistance welder areprotected by an over current device rated or set at notmore than

200

percent of the rated primary current of thewelder, a separate over current device shall not berequired.1605. Cable tray used in connection with welders shallprovide support at not greater than

150

mm intervals.1606. For arc welder, the ampacity of the supplyconductors shall

not less than I eff

of the rating plate.1607. Conductors that supply one or more welders shall beprotected by an over current device rated of set at notmore than

300%

of the conductor.1608. The maximum allowable rating for over currentdevices for an AC transformer welder is

200

percent of therated primary current.1609. The rated ampacity for conductors for individualresistance welders that way be operated at differentvalues of primary current on duty cycle shall not be lessthan

70

percent for seam and automatically fed weldersand

50

percent for manually operated non-automaticwelders.

1610. A permanent sign shall be attached to the cable trayat intervals not greater than

6000

mm. the sign shall read

`Cable tray' for welding cables only.

X-RAY EQUIPMENT

1611. Capacitors that are part of X-ray equipment shall bemounted within

enclosure

of insulting material orgrounded metal.1612. The amapcity of supply branch-circuit conductorsand over current protective devices used in connectionwith X-ray equipment shall not be less than

50

percent ofthe momentary rating or 100 percent of the long timerating, which ever is larger.1613.Sizes 0.75 mm2 or 1.25 mm2 fixture wires andflexible cards shall be permitted for the control andoperating circuits of X-ray and auxiliary equipment whereprotected by not longer than

20

ampere over currentdevices.1614. The rated ampacity of conductors and over currentdevices of a feeder for two or more branch circuitsupplying X-rays units shall not be less than 100 percent ofthe momentary ratings other X-ray apparatus

20

.1615. Mobile x-ray equipment is mounted on a

permanent

base with wheels and/or casters for moving whilecompletely assembled.

ELECTROLYTIC CELLS

1616. The space envelope of the cell line working zoneshall encompass any space within

2400

mm aboveenergized surfaces of electrolytic cells lines.

SWIMMING POOLS, FOUTAINS, AND SIMILARINSTALLATION

1617. Where permanently installed food is installed at adwelling unit (s), at least one 125-volt or 250=voltconvenience receptacle shall be located a minimum of

3000

mm from and not more than

6000

mm from theinside wall of a food.1618. All 125-volt or 250-volt receptacle located within

6000

mm of the inside wall of a pool shall be GFCIprotected.1619. Lighting fixtures and lighting outlets located over thespa or hat tub or within

1500

mm from the inside walk ofthe spa or hot tub shall be a minimum or the spa or hottub.1620. Lighting fixture and lighting outlets shall not beinstalled over the pool or over the area extending

1500

mm horizontally from the inside walls of a pool unless

3600

mm above the maximum water level.1621. Switching devices on the property shall be located atleast

1500

mm from the inside walls of the pool unlessseparated from the pool by a solid fence, wall, or otherpermanent barrier.1622. Receptacle on the property shall be located at

3000

mm from the inside walls of a pool.1623. On lighting system of 15 volts or less, a flush deckbox shall be permitted provided that the flush deck box islocated not less than

1200

mm from the inside wall of thepool.1624. Utility-owned, operated, and maintainedcommunication conductors and the supporting messengershall be permitted at a height of not less than

3000

mmabove swimming pools, diving structures, etc.1625. For permanently installed pools, no underwaterlighting fixtures shall be installed for operation of over

150

volts between conductors.1626. All electric pool water heaters shall have the heatingelements subdivided into loads not exceeding

48

amperesand protected at not more than

60

amperes.1627. Underwater lighting fixture mounted in watts shallbe installed with the top of the fixture lens at least

460

mm below the normal water level of the pool.1628. All electric equipment located within

1500

mm ofthe inside wall of the pool shall be grounded.1629. Wet-nitche lighting fixture shall be connected to anequipment grounding conductor not smaller than

2.0

mm2.1630. For swimming pool water heaters rated at morethan

50

amperes that have specific instructions regardingbonding and grounding, only those parts designated to bebonded shall be bonded, and only those parts designatedto be grounded shall be grounded.1631. Unit heaters in pool deck area shall be mountedover the pool or within the area extending

1500

mmhorizontally from the inside walls of a pool.1632. Electric, motors, controllers and wiring shall belocated at least

1500

mm from the inside wall of the pool.1633. All lighting fixtures installed in fountains includingsubmersible equipment operating shall operate at

250

volts or less between conductors.1634. The maximum length of exposed cord in thefountain shall be limited to

3000

mm.

1635. All pool associated motors shall be connected to anequipment grounding conductor not smaller than

2.0

.1636. At least one convenience receptacle shall be locateda minimum of

1500

mm from and not more than

3000

from the inside walls of a spa or hot tub.1637. Wall switches shall be located at least

1500

mmmeasured horizontally from the inside walls of the spa orhot tub.1638. A pool capable of holding water to a maximumdepth of

1000

mm is a storable pool.1639. The following pool equipment shall be grounded

ground-fault circuit-interrupters, transformer enclosures,electric equipment located within 5 feet of the inside wallof the pool

.1640. In a swimming pool, electric equipment thatdepends on submersion for safe operation shall beprotected against overheating by a/an

low water cut off

.1641. Maximum voltage between conductors serving asubmersible pump in a fountain is

300

volts.1642. No swimming pool lighting fixtures shall be installedfor operation on supply circuits over

150

volts betweenconductors.1643. Lighting fixtures located in the same room and notdirectly associated with s hydromassage bathtub, shall beinstalled in accordance with the requirements covering theinstallation of that equipment in

bathrooms

.1644. A lighting fixture installed in or on the wall of astorable pool shall

have a transformer with a primaryrating not over 150 volts; have an impact lamp thatoperates at 120 volts or less

.1645. All electric equipment, including power supplycords, used with storable pools shall be protected by

GFCI

.1646. Transformers used for the supply of underwaterfixtures together with transformer enclosure shall be

identified

for this purpose.1647. Fountain as use in the Code Article includes drinkingfountain except.

3

d. Precautionary measure of the system25. Code requires that the minimum area exposed surface offered by a plate electrode shall be;a. 1/8 sq. meter

b. ¼ sq. meter

c. 3/8 sq. meter d. ½ sq. meter26. A single grounding electrode is permitted when the resistance to ground does not exceed;a. 5

Ω

b. 10

Ω

c. 15

Ω

d. 25

27. The minimum size of a copper equipment grounding conductor required for equipmentconnected to a 40-ampere circuit.

a. 5.5 sq. mm

b. 8 sq. mm c. 14 sq. mm d. 22 sq. mm28. Open wiring on insulators commonly known as;

a. knob and tube wiring

b. Split knob and receptacle wiringc. Duplex wiring d. Common wiring29. The circuit conductors between the service entrance equipment or isolated generating plantand the branch circuit overload device or devices.

a. feeder

b. disconnecting switchc. overcurrent protector d. secondary conductors30. Is a contact device installed at the outlet for the connection of a single attachment plug.a. switch

b. receptacle

c. male plug d. bulb31. What is the maximum number of bends (in degrees) permitted in rigid metal conduit betweenoutlets.a. 180

b. 360

c. 45 d. 7532. What should you do to prevent shock when working on a high voltage power supply?

a. charge the filter capacitor

b. open the filter capacitorc. closed the filter capacitor d. discharge the filter capacitor33. Gas manufacturing plant where flammable gases may escape is considered as;

a. Class I, Division 1 area

b. Class I, Division 2 areac. Class II, Division 1 area d. Class II, Division 2 area34. A storage battery supplying emergency lighting and power shall maintain not less than 87.5percent of full voltage at total load for a period of at least;a. 2.5 hours b. 2 hours

c. 1.5 hours

d. 1.0 hour35. GFCI operate on currents of

5 mA

b. 3 mA c. 10 mA d. 15 A36. A buck-boost transformer is classified asa. Compensating reactor b.

Autotransformer

c. High density lamp d. Ramset37. When surge occurs a potential of 10,000 volts would exist between the CATV system and theelectrical system and between the grounded conductor within the CATV cable and thegrounded surfaces in the walls of the home, such as water pipes (which are connected to thepower ground), over which the cable runs. What could be the possible effect to the personson a direct contact with the CATV.

a. This potential could also appear across a person with one hand on the CATV cableand the other hand on a metal surface connected to the power ground (e.g., a radiatoror refrigerator).

b. A voltage dip might occur between the power conductor

c. There is an additional voltage drop in the conductor due to surge impedance of the lined. An electromagnetic Interference occur38. The point of attachment of the service-drop conductors to a building or other structure shallprovide the minimum clearances as specified in the code. In no case shall this point ofattachment be less than _____ above finished grade.a. 2500 mm b. 3700 mm c. 2850 mm

d. 3000 mm

39. Where the voltage between conductors does not exceed 300 and the roof has a slope of 100mm in 300 mm, or greater, a reduction in clearance to _____shall be permitted.

a. 1000 mm

b. 900 mm c. 450 mm d. 550 mm40. Which of the following is a short circuit?a. a hot wire touching a grounded metal frameb. a short conductor with a high resistancec. arcing between a hot conductor and a metal box

d. a very low resistance between the circuit conductors

41. In a Three phase four wire system, compose of lighting and motor load, demand factor of 70percent is permitted for that portion of the neutral load in excess of _____ amperes.a. 100

b. 200

c. 300 d. 40042. Communication, radio, and television coaxial cables shall be permitted at a height of not lessthan _____ above swimming and wading pools, diving structures, and observation stands,towers, or platforms.a. 8.0 m

b. 3.0 m

c. 1.0 m d. 0.5 m43. Conductors on poles shall have a separation of not less than _____ where not placed onracks or brackets.a.

300 mm

b. 500 mm c. 1000 mm d. 150 mm44. Reasonable efficiency of operation can be provided when _____ is taken into considerationin sizing the service-lateral conductors.a. mechanical strength b

. ambient temperature

c. voltage drop d. none of these45. For a feeder supplying household cooking equipment and electric clothes dryers themaximum unbalanced load on the neutral conductor shall be considered as _____ of theload on the ungrounded conductors.a. 40% b. 50%

c. 70%

d. 80%46. There would be an additional heating due to other conductors in the duct. This is due to.a. skin effect b. Kelvin effect

c. proximity effect

d. edge effect47. Which of the following is the maximum allowable rating of a permanently connectedappliance where the branch overcurrent device is used as the appliance disconnectingmeans?

a. 1/8 hp

b. ¼ hp c. ½ hp d. 1 hp48. How would you seal unused ko's in panels and boxes?a. cardboard b. duct sealc. tape

d. metal plugs and plates

49. Where conductors are adjusted to compensate for voltage drop, equipment groundingconductors, where required, shall be adjusted proportionally according to _____.

a. diameter

b. cross section area 5

c. circular mil area

d. circumference

50. Line and ground connecting conductors shall not be smaller than 2.0 sq mm copper or 3.5 sq. mm aluminum. The arrester grounding conductor shall be connected to one of the following except for.

A. Grounded service conductor

b.grounding electrode conductor of 25 ohms or higher

c. Grounding electrode. for the service

d. Equipment grounding terminal in the service equipment