HABILIS EE TRAINING CENTER

0061 Isabel Ramiro St. (Bayug Road), Purok 6A, Tambo-Hinaplanon, Iligan City

PEC 2009

Multiple Choice. *Select the correct answer for each of the following questions. Mark only one answer for each item by shading the box corresponding to the letter of your choice on the answer sheet provided.*

1. Period of operation and minimum capacity of emergency source of power for Passenger vessel over 20 meters in length Ocean & coastwise 1600 g.t. & over, and, any passenger vessel, regardless of tonnage or service, where electric power-operated water tight doors are required or installed.
   a.) ½ hour to 36 hours
   b.) ½ hour to 12 hours
   c.) 1 hour to 24 hours
   d.) 1 hour to 12 hours
2. Where circuit breakers are used to protect the primary side of a transformer over 600V nominal, their continuous current rating shall NOT exceed _____ of the rated primary current.
   a.) 250%
   b.) 300%
   c.) 175%
   d.) 200%
3. For a wye-start, delta-run connected motor-compressor, the selection of branch-circuit conductors between the controller and the motor-compressor shall be permitted to be based on ___ percent of either the motor-compressor rated load current or the branch-circuit selection current, whichever is greater.
   a.) 25
   b.) 58
   c.) 67
   d.) 125
4. A recessed fixture that is not identified for contact with insulation shall have all recessed parts spaced at least ____ from combustible materials.
   a.) 10 mm
   b.) 12 mm
   c.) 15 mm
   d.) 20 mm
5. Grounding electrodes shall be installed such that at least ____ of length is in contact with the soil.
   a.) 2,000 mm
   b.) 1,500 mm
   c.) 2,500 mm
   d.) 2,400 mm
6. A generator set used for standby power systems shall have a time delay feature permitting a ____ - minute setting to avoid retransfer in case of short time reestablishment of the normal source.
   a.) 10
   b.) 8
   c.) 12
   d.) 15
7. The chasis grounding terminal of the battery shall be bonded to the vehicle chassis with a copper conductor of ___ size or its equivalent.
   a.) 5.5 mm^2
   b.) 3.5 mm^2
   c.) 8.0 mm^2
   d.) 2.0 mm^2
8. In an ambulatory health care centers, the alternate source of power shall be separate and independent of the normal source and shall have a capacity to sustain its connected loads for a minimum of ____ after loss of normal source.
   a.) 2 hours
   b.) 2 ½ hours
   c.) 1 ½ hours
   d.) 1 hour
9. Clearance in any direction to the water level, edge of water surface, base of diving platform, or permanently anchored raft for insulated supply or service droop cables 0 up to 750 volts to ground…
   a.) 3,700 mm
   b.) 5,500 mm
   c.) 4,300 mm
   d.) 6,700 mm
10. If there will be six or more 2-wire branch circuits for a one family dwelling unit, the minimum service entrance capacity shall be _____
    a.) 60 A
    b.) 100 A
    c.) 90 A
    d.) 120 A
11. Dry-type transformers installed outdoors rated _____ shall have a separation of at least 300 mm from combustible material unless separated from the combustible material by a fire-resistant, heat-insulated barrier.
    a.) 125 kVA
    b.) 100 kVA
    c.) 115 kVA
    d.) 112 ½ kVA
12. Each resistance welder shall have an overcurrent device rated or set at not more than ____ percent of the conductor rating.
    a.) 300
    b.) 250
    c.) 175
    d.) 150
13. What type letter for conductors has a trade name “moisture resistant thermoplastic”?
    a.) TW
    b.) THHW
    c.) THWN
    d.) THHN
14. For 101 A to 200 A circuits, the minimum insulation required shall be _____.
    a.) 50,000 ohms
    b.) 100,000 ohms
    c.) 250,000 ohms
    d.) 75,000 ohms
15. Communication wires and cables shall be separated at least _____ from conductors of any electric light, power, Class 1, nonpower-limited fire alarm, or medium power network powered broadband communication circuits.
    a.) 50 mm
    b.) 100 mm
    c.) 150 mm
    d.) 200 mm
16. The rated ampacity of conductors and overcurrent devices of a feeder for two or more branch circuits supplying X-ray units shall not be less than _____ of the momentary demand rating of the two largest X-ray apparatus plus _____ of the momentary ratings of other X-ray apparatus.

a.) 125 percent, 25 percent
b.) 100 percent, 20 percent
c.) 80 percent, 25 percent
d.) 100 percent, 125 percent

17. Direct burial cables or conductors with nominal voltage of 600 V or less and passes under streets, hi-ways, roads, alleys, driveways and parking lots shall have a minimum cover distance of ____.
a.) 500 mm
c.) 460 mm
b.) 600 mm
d.) 550 mm

18. Boxes intended to enclose flush devices shall have an internal depth of NOT less than _____.
a.) 24 mm
c.) 16 mm
b.) 20 mm
d.) 28 mm

19. Where shore power is supplied, those accommodations for boats longer than ____ or less in length shall be equipped with shore-power receptacles of a locking and grounding type rated at not less than ____.
a.) 6000 mm, 30 A
c.) 7000 mm, 20 A
b.) 6000 mm, 20 A
d.) 7000 mm, 30 A

20. Open conductors on insulators shall be separated at least ____ from metal raceways, piping or other conducting materials.
a.) 50 mm
c.) 70 mm
b.) 60 mm
d.) 40 mm

21. Hazardous locations where combustible dust is not normally in the air in quantities sufficient to provide explosive or ignitable mixtures, and dust accumulations are normally insufficient with the normal operation of electrical equipment.
a.) Class II, Division 1
c.) Class III, Division 1
b.) Class II, Division 2
d.) Class III, Division 2

22. If the setting of the overcurrent device in a circuit ahead of the equipment is 60A, the minimum equipment grounding conductor using copper shall be _____.
a.) 5.5 mm^2
c.) 2.0 mm^2
b.) 3.5 mm^2
d.) 8.0 mm^2

23. Who will accomplish box 2 of Application for Electrical Permit form?
a.) Professional Electrical Engineer who signed and sealed specification
b.) Electrical Contractor
c.) Person In-Charge of Installation
d.) Owner/Authorized Representative

24. A single piece of equipment consisting of multiple receptacles comprised of four more receptacles shall be computed at not less than _____ per receptacle.
a.) 180 VA
c.) 90 VA
b.) 45 VA
d.) 360 VA

25. Type UF cable shall be used for which of the following applications:
a.) Concrete encased
c.) Service entrance cable
b.) Direct buried
d.) None of the above

26. The residual voltage of a capacitor must be reduced to which of the following voltage levels within one minute after the capacitor is disconnected from the power source:
a.) 50 volts or less
c.) 120 volts or less
b.) 60 volts or less
d.) Zero volts

27. The required distance between outlets along the floor line of any wall space in the living room of a dwelling unit is which of the following:
a.) No more than 1800 mm measured horizontally from one outlet to another
b.) Every 3000 mm
c.) Only one outlet is required per wall
d.) None of the above

28. The sum of cross-sectional areas of all contained conductors at any cross section of the nonmetallic wireway shall not exceed _____ of the interior cross-sectional area of the nonmetallic wireway.
a.) 10 percent
c.) 20 percent
b.) 15 percent
d.) 25 percent

29. Aluminum enclosures and fittings are allowed to be used with which of the following:
a.) PVC conduit
c.) Ferrous conduits
b.) Electrical nonmetallic tubing
d.) Steel electrical metal tubing

30. In a health care facilities, the system shall be arranged so that, in the event of failure of the normal power source, the alternate source of power shall be automatically connected to the load within _____.
a.) 2 minutes
c.) 30 seconds
b.) 1 minute
d.) 10 seconds

31. If an existing two-wire, nongrounding receptacle is replaced in a location where the *Code* requires a GFCI receptacle, it must be replaced with which of the following?
a.) GFCI receptacle
c.) Three-wire, grounding-type receptacle
b.) Two-wire, nongrounding-type receptacle
d.) All of the above

32. A disconnecting means for a controller is also permitted to be the disconnecting means for the motor and driven machine, even where out of sight of the motor and driven machine:
a.) in an industrial building with qualified service personnel, if capable of being locked in the open position
b.) if capable of being locked in the open position
c.) in commercial and industrial buildings with qualified service personnel
d.) if provided with an alarm to indicate when the disconnect is closed

33. AC - DC general use snap switches may be used to control inductive loads that do not exceed the rating at the voltage of which of the following:
a.) 5 percent
c.) 50 percent

b.) 45 percent
d.) 100 percent

34. In PEC 2000, Article 4.0 is
a.) Definitions
c.) Wiring Methods
b.) Wiring Protection
d.) Flexible Cords and Cables

35. The allowable current ampacity of 14 mm^2 THW copper wire is
a.) 55 A
c.) 70 A
b.) 65 A
d.) 80

36. For track lighting in other than dwelling units or guest rooms of hotels or motels, an additional load of ____ shall be included for every 610 mm of lighting track or fraction thereof.
a.) 180 VA
c.) 1200 VA
b.) 250 VA
d.) 1500 VA

37. If there are no overcurrent protective device rated 30 A or less with neutral connection, this panel board is classified as a _____.
a.) lighting panelboard
c.) power panelboard
b.) appliance panelboard
d.) back-up panelboard

38.The walls and roofs of transformer vaults shall be constructed of materials that have adequate structural strength for the condition with a minimum fire resistance of _____ hours.
a.) 1.5
c.) 2.5
b.) 2.0
d.) 3.0

39. For fixed electric space heating equipment consisting of resistance elements with a motor, the branch circuit conductor ampacity and the overcurrent rating of the protective device that supplies the equipment shall not be less than which of the following:
a.) 100% of the total heating equipment load
c.) 125% of the total load of the motor and the heaters
b.) 125% of the total motor load
d.) The combined ampacity of all of the equipment

40. Each resistive welder and control equipment shall be provided with which of the following:
a.) A temporary equipment connection
c.) A switch or circuit breaker power disconnection means
b.) A grounding conductor
d.) All of the above

41. A high school graduate can take the registered master electrician's examination if he has subsequent specific record of at least ____ years of apprenticeship in electrical wiring, installations of electrical equipment.
a.) 6
c.) 4
b.) 3
d.) 5

42. Type THHN copper conductors have a maximum operating temperature of ____.
a.) 60 °C
c.) 75 °C
b.) 90 °C
d.) 30 °C

43. Receptacle outlets in floors shall not be counted as part of the required number of receptacle outlets unless located within ____ of the wall.
a.) 450 mm
c.) 600 mm
b.) 500 mm
d.) 700 mm

44. For service-entrance phase conductors larger than 500 mm^2 copper or 850 mm^2 aluminum, the grounded conductor shall not be smaller than ____ of the area of the largest service -entrance phase conductor.
a.) 10 percent
c.) 15 percent
b.) 12 ½ percent
d.) 17 ½ percent

45. For optional calculation for additional loads in existing dwelling units, the first 8 kVA shall be computed at 100% while the remainder of load is at _
a.) 35%
c.) 50%
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d.) 40%

46. For show window lighting, a load of not less than ___ volt-amperes shall be included for each linear metre of show window, measured horizontally along its base.
a.) 180
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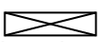
47. In PEC 2000,  is the standard symbol for
a.) Power panelboard
c.) fuse cut-out
b.) Lighting panelboard
d.) Motor controller, 3 Pole across the line

48. Aluminum, copper-clad aluminum or copper conductors of size ____ and larger, comprising each phase, neutral or grounded circuit conductor, shall be permitted to be connected in parallel (electrically joined at both ends to form a single conductor).
a.) 50 mm^2
c.) 8.0 mm^2
b.) 38 mm^2
d.) 14 mm^2

49. In an electrical lay-out, floor plan shall show
I. Plan for power II. Plan for Lighting and Receptacle outlets III. Plan for Fire Detection and Alarm Circuits
a.) I only
c.) I and III only
b.) I and II only
d.) I, II and III

50. At least ____ of free conductor shall be left at each outlet, junction and switch point for splices or the connection of fixtures or devices.
a.) 200 mm
c.) 150 mm
b.) 100 mm
d.) 300 mm

MAY 2009 RME PREBOARD EXAM PEC

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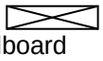
47. In PEC 2000,  is the standard symbol for
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