

Republic of the Philippines
PROFESSIONAL REGULATION COMMISSION
Manila

BOARD OF ELECTRICAL ENGINEERING

REGISTERED MASTER ELECTRICIAN Licensure Examination

PHILIPPINE ELECTRICAL CODE

INSTRUCTION: Select the correct answer for each of the following questions. Mark only one answer for each item by shading the box corresponding on the letter of your choice on the answer sheet provided. STRICTLY, NO ERASURES ALLOWED. Use pencil No. 1 only.

MULTIPLE CHOICES

1. Each patient bed in a hospital critical care unit must have at least how many of the following:
 - a. 2 duplex receptacles
 - b. 4 single or duplex receptacles
 - c. 4 hospital-grade receptacles connected to an emergency system branch circuit
 - d. 6 hospital-grade receptacles**

2. A receptacle installed to provide electric power to a recreational vehicle must comply with which of the following configurations:
 - a. 15 amps: 125 volt, 15 amperes, 2-pole, 4-wire grounding type for 120-volt system
 - b. 20 amps: 125 volt, 20 amperes, 3-pole, 4-wire grounding type for 120/240 volt system
 - c. 30 amps: 125 volt, 30 amperes, 2-pole, 4-wire grounding type for 120-volt system
 - d. 50 amps: 125 volt, 50 amperes, 3-pole, 4-wire grounding type for 120/240 volt system**

3. Temporary electrical installations for holiday displays must be permanently removed after which of the following time periods:
 - a. 31 days after installation
 - b. 60 days after installation
 - c. 90 days after installation**
 - d. 31 days after the end of the event

4. Requirements for patient beds located in critical care areas include which of the following:
 - a. The location must have at least two branch circuits.
 - b. The location must have one or more branch circuits from the emergency system and one or more from the normal power system.

- c. At least one of the branch circuits on the emergency system has to supply an outlet at each individual bed location.
 - d. All of the above**

- 5. Wiring for cranes and hoists enclosed in raceways which shall be permitted to be which of the following type:
 - a. Type AC with insulated grounding conductors**
 - b. Contact conductors
 - c. Short lengths of exposed conductors to resistors and collectors
 - d. All of the above

- 6. An electrically interconnected assembly of electrolytic cells that is supplied by a direct-current power source is known as which of the following:
 - a. Electrically connected cells
 - b. Electrolytic cell system
 - c. A cell line**
 - d. Intrinsically connected electrolytic units

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

- 8. Branch circuits and feeders for electric vehicle supply equipment shall have overcurrent protection that is rated to comply with which of the following:
 - a. Not less than 125% of the maximum load of the equipment**
 - b. Not more than 125% of the maximum load of the equipment
 - c. Not less than 115% of the continuous load of the equipment
 - d. Not more than 118% of the maximum load of the equipment

- 9. Power supply conductors for fire pumps shall meet which of the following requirements:
 - a. Be listed for wet locations
 - b. Connect directly to a listed fire pump controller**
 - c. Be rated at 600 volts or more
 - d. All of the above

- 10. For elevator cars, a separate branch circuit is required for which of the following power systems:
 - a. Lights and auxiliary lighting
 - b. Receptacles
 - c. Ventilation
 - d. All of the above**

- 11. Supply conductors for industrial machinery shall have an ampacity no less than 125 percent of the full-load current of all resistance heating loads plus which of the following:
 - a. 125 percent of the full-load current rating of the highest rated motor

19. Overcurrent devices in dwelling units and hotel guest rooms shall not be located in which of the following areas:
- a. Bedrooms
 - b. **Bathrooms**
 - c. Kitchens
 - d. All of the above
20. In order to balance a 3-wire, single-phase 230/115 volt circuit, which of the following must be done:
- a. **The neutral conductor must carry the unbalanced current.**
 - b. The hot conductor must carry the total current.
 - c. The neutral conductor should be used for grounding only.
 - d. None of the above
21. In fixed electric space heating equipment, a disconnection means shall be provided from all ungrounded conductors to which of the following equipment components:
- a. The heater
 - b. Motor controllers
 - c. Supplementary overcurrent protection devices
 - d. **All of the above**
22. Computation of fluorescent fixture loads shall be based on which of the following:
- a. **The total ampere rating of the fixture**
 - b. The total wattage of the lamps
 - c. The total volts of the wiring system
 - d. None of the above
23. A multiwire branch circuit may be used to supply which of the following:
- a. A 120/240 volt system to one piece of utilization equipment
 - b. A 120/240 volt system where all conductors are opened simultaneously
 - c. **Both of the above**
 - d. None of the above
24. Parallel conductors in each phase or neutral shall be which of the following:
- a. **The same length and terminated in the same manner**
 - b. Any size trade wire
 - c. Either A or B
 - d. None of the above
25. The maximum number of overcurrent devices permitted in a lighting panel is which of the following:
- a. 10
 - b. 24
 - c. **42**
 - d. 17
26. Open conductors shall be supported on which of the following:
- I. Glass or porcelain knobs
 - II. Racks or brackets
 - III. Strain insulators
 - a. I or III
 - b. I or II
 - c. II or III
 - d. **Any of the above**

27. NM cable installations shall conform to which of the following:
- a. It may be covered with plaster
 - b. It may be fished through air voids in masonry block or tile walls**
 - c. Both of the above
 - d. None of the above
28. The ampacity of multiconductor cables installed in a cable tray shall be derated based on which of the following:
- a. The total number of current carrying conductors in the cable
 - b. The total number of current carrying conductors in the cable tray**
 - c. Both of the above
 - d. None of the above
29. Switching should be done in which of the following:
- a. The wall
 - b. The ungrounded conductor**
 - c. The grounded conductor
 - d. A termination box
30. Fuses must be clearly marked with which of the following:
- a. Voltage rating
 - b. Ampere rating
 - c. Interruption rating, if other than 10,000 amperes
 - d. All of the above**
31. If a new office building has two service heads and will have only one service drop, then the maximum distance permitted between the service heads shall be which of the following:
- a. 1800 mm
 - b. 1500 mm**
 - c. 1200 mm
 - d. 900 mm
32. Type FCC cables shall be clearly and permanently marked with which of the following:
- a. The conductor material
 - b. The ampacity
 - c. The maximum temperature rating
 - d. All of the above**
33. An automatic overcurrent device that protects service conductors supplying a specific load, such as an electric water heater, shall be permitted to be locked or sealed in order to prevent which of the following:
- a. Corrosion
 - b. Tampering**
 - c. Derating of the conductors
 - d. Tripping
34. A service mast used to support service drop conductors shall be supported by which of the following:
- a. Glass or porcelain
 - b. Braces or guys**
 - c. Studs or hangers
 - d. None of the above
35. 5. A transformer enclosure that extends directly to an underwater pool light and forms a shell must have which of the following:
- a. One grounding terminal

- b. Be of a nonmetallic material
 - c. The number of conduit entries plus one**
 - d. None of the above
36. Messenger supported wiring shall not be used for which of the following:
- a. In hoistways
 - b. Where subjected to severe physical damage
 - c. Both of the above**
 - d. None of the above
37. Which of the following entrances does not require a switched outlet:
- a. An attic
 - b. A drive through garage door**
 - c. A walk through porch door
 - d. All of these require a switched outlet
38. All joints, splices and free ends of conductors shall have which of the following:
- a. Insulation equivalent to the conductor**
 - b. Insulation as thick as the conductor
 - c. Rubber insulation
 - d. All of the above
39. Open motors with commutators shall be located so that any sparks cannot reach any combustible materials; however which of the following is also true:
- a. This applies only to motors over 600 volts
 - b. This requirement shall not prohibit the motors from being on wooden floors**
 - c. This does not prohibit these motors from being located in a Class 1 area
 - d. All of the above
40. Which of the following receptacles do not need to be grounded:
- a. Receptacles located on an interior garage wall
 - b. Receptacles for electric ranges
 - c. Outdoor receptacles
 - d. All of the above**
41. A feeder supplies a residential electric range and electric clothes dryer, and the maximum unbalanced load on the neutral conductor is considered to be which of the following percentages of the load on the ungrounded conductors:
- | | |
|----------------------|---------------|
| a. 20 percent | b. 50 percent |
| c. 70 percent | d. 85 percent |
42. Type FCC cable wiring systems shall be installed in which of the following:
- | | |
|------------------|-----------------------------|
| a. Under carpets | b. In vertical riser |
| c. Along tile | d. None of the above |
43. All of the conductors in a multiwire branch circuit must meet which of the following requirements:
- a. Originate from the same panelboard
 - b. Terminate at the same location

- c. Originate from the same feeder
 - d. None of the above**
44. Which of the following identifying items of information is not required on a motor nameplate:
- a. Voltage
 - b. Horsepower
 - c. Watts**
 - d. Manufacturer's identification
45. A single receptacle shall have a rating of which of the following:
- a. 50 percent of the branch circuit rating
 - b. 100 percent of the branch circuit rating**
 - c. 15 amps
 - d. None of the above
46. Safe access in the form of a permanent ladder shall be provided to the working spaces around electric equipment over 600 volts that is installed on or in which of the following:
- a. Mezzanine floor
 - b. Attic
 - c. Balconies
 - d. All of the above**
47. Surge arresters shall meet which of the following requirements:
- a. May be located outdoors
 - b. Shall be made inaccessible to unqualified persons
 - c. May be located indoors
 - d. All of the above**
48. A general-use snap switch shall only be used to control which of the following on alternating current circuits:
- a. Resistive loads that do not exceed the rating of the switch
 - b. Motor loads not in excess of 80% of the switch ampere rating
 - c. Inductive loads not exceeding the ampere rating of the switch
 - d. All of the above**
49. A controller that is not in sight of a motor location shall meet which of the following requirements:
- a. Be capable of being shut off
 - b. Be connected to a bonding jumper
 - c. Be capable of being locked in the open position**
 - d. Be capable of being set down in the off position
50. The service conductors that run between the street main and the first point of connection to an underground service entrance are which of the following:
- a. The service lateral**
 - b. A grounded loop system
 - c. A service drop
 - d. None of the above