

INSTITUTE OF INTEGRATED ELECTRICAL ENGINEERS OF THE PHILIPPINES

Albay-Legazpi Chapter

Legazpi City

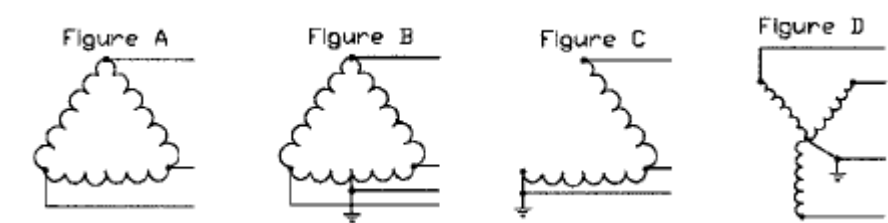
MAY 2010 RME TECHNICAL PREBOARD EXAM

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. A method for stopping a polyphase motor quickly by momentarily connecting the motor for reverse rotation.
☒ a.) plugging ☐ c.) inching
☐ b.) jogging ☐ d.) latching
2. A device used to measure the mechanical output of a motor or a generator is called
☐ a.) watt-hour meter ☐ c.) engine indicator
☐ b.) sphygmomanometer ☒ d.) dynamometer
3. In an electrical conductor that consists of 16 strands, each with a diameter 0.0837 inches, the area of the conductor would be which of the following:
☐ a.) 83.7 circular mils ☐ c.) 83700 circular mils
☐ b.) 70057 circular mils ☒ d.) 112091 circular mils
4. An applicant for Registered Master Electrician Examination who has completed from a one year electrician/s course or instruction from a vocational or trade school recognized by the Philippine government and in addition, has at least _____ years of apprenticeship after completion of the course of instruction on electrical wiring and installation, operation and maintenance of utilization devices and equipment is qualified to take the exam.
☐ a.) 1 ☒ c.) 3
☐ b.) 2 ☐ d.) 5
5. Two incandescent 100 watt lamps operating for 8 hours at an average electrical energy cost of P8.00 per kilowatt hour will have a total energy cost equal to which of the following?
☒ a.) P 12.80 ☐ c.) P 6.40
☐ b.) P 384.00 ☐ d.) P 192.00
6. Two transmission wires create corona when which of the following exists:
☒ a.) The wires have a high potential difference ☐ c.) The wires are spaced too far apart
☐ b.) The wires are installed overlapping or too close together ☐ d.) None of the above
7. When skinning a small wire, the insulation should be "penciled down" rather than cut square to _____.
☐ a.) allow more room for the splice ☒ c.) decrease the danger of nicking the wire
☐ b.) save time in making the splice ☐ d.) prevent the braid from fraying
8. A rigid conduit connecting to an outlet box should have a
☐ a.) bushing and locknut on the inside ☐ c.) bushing on the outside and a locknut on the inside
☐ b.) locknut and bushing on the inside ☒ d.) locknut on the outside and a bushing on the inside
9. For better illumination you would _____.
☐ a.) random spacing of lights ☒ c.) even spacing, numerous lights
☐ b.) evenly spaced, higher ceilings ☐ d.) cluster lights
10. Electrical motors with the highest voltage rating are used for which of the following purpose(s)?
☐ a.) To produce the maximum possible power from the motors ☐ c.) To lower power consumption
☒ b.) To reduce the size of the supply conductors required ☐ d.) All of the above
11. Which of the following should be tested to check for voltage to ground:
☐ a.) From the breaker to the grounding neutral ☐ c.) From a breaker to the cabinet
☐ b.) From hot to neutral ☒ d.) All of the above
12. If a two-wire 230 volt circuit has one grounded conductor and supplies a single-phase 5 horsepower motor, then the required number of overloads is which of the following:
☐ a.) Two, one in each conductor ☒ c.) One in the ungrounded conductor
☐ b.) One in the grounded conductor ☐ d.) Zero, no overload is required
13. When re-routing conduit, it may be necessary to increase the wire size, if the distance is greater in order to _____.
☐ a.) account for current drop ☐ c.) allow for possible resistance drop
☒ b.) compensate for voltage drop ☐ d.) account for ampacity drop
14. The important function of a type S fuse is _____.
☒ a.) non-interchangeable ☐ c.) slow burner
☐ b.) motor protection ☐ d.) fast acting
15. Large squirrel cage induction motors are usually started at a voltage considerably lower than the line voltage to _____.
☐ a.) allow the rotor current to build up gradually ☐ c.) permit starting under full load
☒ b.) avoid excessive starting current ☐ d.) obtain a low starting speed
16. Inductance and capacitance are not considerations in a DC circuit for which of the following reasons:
☒ a.) DC supply has no frequency ☐ c.) Both of the above
☐ b.) DC supply carries power equal ☐ d.) None of the above
17. All wiring must be installed so that when completed _____.
☐ a.) it meets the current-carrying requirements of the load ☐ c.) is acceptable of Code compliance authorities
☒ b.) it is free of shorts and unintentional grounds ☐ d.) it will withstand a hy-pot test
18. Bonding does which of the following:
☒ a.) Provides electrical continuity ☐ c.) Controls the load on the system installation
☐ b.) Regulates the voltage ☐ d.) All of the above

19. Who shall be the executive officer of the Board of Electrical Engineering and shall also conduct the examination given by the board, as provided in Art. II, Sec 9, of the New Electrical Engineering Law?
- A member of the Board of Electrical Engineering
 - The President of the Philippines
 - c.) The commissioner of the Professional Regulation Commission**
 - The Chairman of the Board of Electrical Engineering
20. A generic term for a group of non-flammable synthetic chlorinated hydrocarbons used as electrical insulating media:
- a.) askarel**
 - acid
 - chloragorm
 - solder
21. Which of the following forms of electrical equipment is not considered a device?
- Receptacle
 - b.) Light bulb**
 - Three-way switch
 - Disconnect switch
22. In a dry-type transformer with a primary to secondary turns ratio of 4:1, if the primary is rated at 480 volts, then the secondary voltage will be which of the following?
- 1200 volts
 - 240 volts
 - 480 volts
 - d.) 120 volts**
23. _____ has the highest electrical breakdown strength and the longest life over all other materials used for insulation.
- rubber insulation
 - b.) impregnated paper**
 - woven cloth
 - thermoplastic
24. Which of the following terms is used to describe the inductive action, which causes current to flow on the outer surface of a conductor:
- Halo effect
 - b.) Skin effect**
 - Inductance
 - Insulated par value
25. A circuit breaker that has purposely introduced into it a delay in the tripping action and which delay decreases as the magnitude of the current increases is a _____ circuit breaker.
- a.) inverse time**
 - adjustable
 - control vented
 - vented power
26. Which of the following is used to control speed in a DC motor:
- a.) Field winding**
 - Ground fault breaker
 - A primary transformer
 - A bonding jumper
27. Who comprises the present Board of Electrical Engineering?
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- I
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 - III
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28. Tinning rubber insulated twisted cable is done to _____.
- make the strands stronger
 - b.) prevent chemical reactions between the copper and the rubber**
 - increase the resistance
 - meet NEMA requirements
29. Which of the following is a characteristic of a wye-connected three-phase alternator?
- the line current is less than the phase current
 - the line voltage is equal to the phase voltage
 - c.) the line voltage is greater than the phase voltage**
 - the line current is greater than the phase current
30. Who will accomplish box 2 of Application for Electrical Permit form?
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31. The most important reason for using a conduit-type fitting in preference to making a bend in a one inch conduit is to _____.
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 - cut down the amount of conduit needed
 - make a neater job
 - d.) make wire pulling easier**
32. If a circuit breaker is installed vertically and the handle is flipped up, then the circuit breaker will be which of the following:
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 - b.) On**
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33. A foreman in charge of a crew of men preparing to work on a low voltage tension circuit should caution them to _____.
- work only when the load is zero
 - b.) consider the circuit hot at all times**
 - never work on any circuit alone
 - wait until the circuit has been killed
34. Before using a megger it should be tested by placing the test leads together and turning the crank. What will be the reading to indicate that the leads and megger are in good condition?
- between 100 to 1,000
 - above 1,000
 - below 100
 - d.) 0**
35. Devices are equipment that carry current, but do not perform which of the following functions?
- Serve a grounding function
 - Provide overcurrent protection
 - c.) Utilize electric energy**
 - Control power

36. Based on the diagram options below, which figure illustrates a 3-phase electrical system where one ungrounded conductor has a higher voltage to the ground than the other hot conductor?



- a.) Figure A

b.) Figure B

c.) Figure C

d.) Figure D
37. Instrument use to measure specific gravity of the liquid in a storage battery.
- a.) micrometer

b.) hydrometer

c.) calorimeter

d.) viscometer
38. What type of fastener would you use to mount a box to a hollow tile wall?
- a.) expansion bolts

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39. Which of the following is not a file type:
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42. Which of the following colors of insulation or markings are not allowed to identify hot phase conductors:
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44. Which of the following has the highest electrical resistance:
- a.) Water

b.) Iron

c.) Paper

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45. If excessive amounts of metal in or on a building become energized and could be subject to personal contact, which of the following will provide additional safety measures:
- a.) Adequate bonding and grounding**

b.) Bonding

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d.) None of the above
46. According the Kirchoff's current law, electrical current will do which of the following in parallel circuits:
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47. How do you call a diagram showing the physical location of the components such as coils, contacts, motors and the like in their actual positions?
- a.) ladder diagram

b.) schematic diagram

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d.) power flow diagram
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- a. increasing the wire size

b. increasing the current

c. decreasing the load

a. I only

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49. Which of the following is NOT a safe practice when lifting heavy items?
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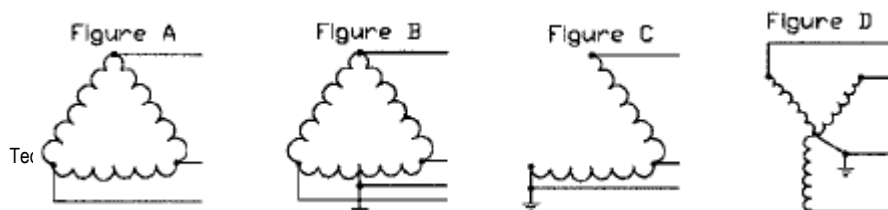
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