RME TRIVIA #1

1. An instrument that is used to measure the diameter of a wire or cable to thousandths of an inch is a _____.

a.) Galvanometer **b.) Micrometer**
b.) c.) Hydrometer d.) Ruler

2. _____ can be generated.

I. Electricity II. Electrical energy

a.) I only **b.) II only**
c.) Both I & II d.) either I nor II

3. A switch intended for use in general distribution and branch circuits. It is rated in amperes, and it is capable of interrupting its rated current at its rated voltage, is a ____switch.

**a.)** By pass isolation **b.) General use**
c.) Isolating d.) Transfer

4. A transformer would most likely have a _____ efficiency.

a.) 60% b.) 70% c.) 80% **d.) 90%**

5. A type of AC motor that runs at a constant speed and is used for such purposes as an electric clock motor is a _____ motor.

a.) AC squirrel cage c.) Wound rotor induction
b.) AC induction **d.)Synchronous**

6. Not readily accessible to persons unless special means for access are used is _____.

a.) Elevated b.) Guarded
**c.) Isolated** d.) Listed

7. 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** b.) Adjustable
c.) Control vented d.) Vented power

8. Where conductors with an ampacity higher than the ampere rating or setting of the overcurrent device are used, the _____ shall determine the circuit rating.

a.) Conductor ampacity
**b.) Overcurrent device**
c.) Combined rating
d.) Derated ampacity

9. _____ has the highest electrical breakdown strength and longest life over all other materials used for insulation.

**a.)** Rubber insulation **c.) Impregnated paper**
**b.)** Woven cloth d.) Thermoplastic

10. Voltage in a generator is produced by _____.

a.) Resonance b.) Pressure **c.) Cutting lines of force** d.) Chemical

11. The output of a 3Ø transformer is measured in units called _____.

a.) Watt **b.) Volt-amps**
b.) Impedance d.) Turns-ratio

12. The definition of ampacity is _____.

a.) The current-carrying capacity of conductors expressed in volt-amps
b.) The current-carrying capacity expressed in amperes
c.) The current-carrying capacity of conductors expressed in wattage
**d.) The current in amperes a conductor can carry continuously under the conditions of use without exceeding its temperature rating**

13. The grounded conductor would connect to the _____ of a lamp holder.

a.) **Screw shell** b.) Filament
c.) Base contact d.) Lead in wire

14. A negatively charged body has _____.

**a.) Excess of the electrons**
b.) Excess of neutrons
c.) Deficit of electrons
d.) Deficit of neutrons

15. As the power factor of a circuit is increased _____.

**a.) Reactive power is decreased**
b.) Active power is decreased
c.) Reactive power is increased
d.) Both active and reactive power are increased

16. The breakdown voltage of insulation depends upon _____ value of AC voltage.

a.) R.M.S. b.) Effective
**c.) Peak** d.) 1.732 of peak

17. A value assigned to a circuit or system for the purpose of conveniently designating its voltage class is _____.

a.) **Nominal Voltage** c.) Voltage (of a circuit)
b.) Voltage to ground d.) Voltage$^2$

18. To calculate the va, one needs to know the _____.

**a.) Voltage and current**
b.) Impedance and conductance
c.) Resistance and impedance
d.) Ohms and resistance

19. Frequency is measured in _____.

a.) **Hertz** b.) Voltage
c.) RPM d.) Foot pounds

20. What relationship determines the efficiency of electrical equipment?

a.) The power input divided by the output
b.) The volt-amps x the wattage
c.) The va divided by the pf
**d.) The power output divided by the input**

21. What is the formula to find watt hour?

a.) E x T x 1000 **b.) I x E x T**
c.) I x E x T/1000 d.) E x T x Ø/1000

22. Single conductor cable runs within a building are generally more common than multicable runs because _____.

a.) Of conduit fill **c.) The splicing is easier**
b.) Of the temperature d.) The weight is evenly distributed

23. The Resistance of an open circuit is equal to _____.
a.) Less than one ohm b.) Zero
**c.) Infinity** d.) None of these

24. The definition of ambient temperature is _____.

a.) The temperature of the conductor
b.) The insulation rating of the conductor
**c.) The temperature of the area surrounding the conductor**
d.) The maximum heat the insulation can be used within

25. Special permission is _____.

a.) Granted by the electrical foreman on the job.
b.) Verbal permission by the inspector.
c.) Given only once on one blueprint change request.
**d.) The written consent of the authority having jurisdiction.**

26. Which of the following is true?

a.) Wooden plugs may be used for mounting electrical equipment in concrete.
b.) The high-leg conductor of a 4-wire delta is identified blue in color.
**c.) The minimum size service permitted by the Code for a residence is 100 amps.**
d.) The ungrounded conductor is connected to the screw shell of a lampholder.

27. What percentage of the maximum (peak) voltage is the effective (R.M.S.) voltage?
a.) 100% **b.) 70.7%**
b.) c.) 63.7%d.) 57.7%

28. To fasten a box to a terra cotta wall you should use which of the following?

a.) Wooden plug b.) Lag bolt
c.) Expansion bolt **d.) Toggle bolt**

29. A capacitor opposes _____.

a.) Both a change in voltage and current
b.) Change in current
**c.) Change in voltage**
d.) none of these

30. The electromotive force required to cause a current to flow may be obtained ____.

I. Thermally II. Mechanically III. Chemically

a.) I only b.) I & III only
c.) II & III only **d.) I, II, & III**

31. A dynamo is _____.

a.) A pole line insulator
b.) A tool used to test dielectric strength
c.) A meter used for checking the R.P.M. of a motor
**d.) A machine for converting mechanical energy**

32. The electric pressure of a circuit would be the _____.

a.) **Voltage** b.) Amperage
c.) Resistance d.) Wattage

33. The transferring of electrons from one material to another would be _____.

a.) Electrochemistry
**b.) Static electricity**
c.) Solar electricity
d.) Piezoelectricity

34. The usual service conditions under which a transformer should be able tp carry its rated load are _____.
I. At rated secondary voltage or not in excess of 105% of the rated value
II. At rated frequency
III. Temperature of the surrounding cooling air at no time exceeding 40°C (104°F) and average temperature of the surrounding cooling air during any 24-hour period not exceeding 30°C (86°F)

a.) I only b.) II only
c.) III only **d.) I, II, and III**

35. When a circuit breaker is in the OPEN position

I. You have a short in the ungrounded conductor
II. You have a short in the grounded conductor

a.) I only b.) II only
**c.) Either I or II** d.) Both I and II

36. The symbol for a wye connection is _____.
a.) Σ b.) Δ c.) Ø **d.) Y**

37. Wire connectors are generally classified as _____ type (s).

I. Thermal II. Pressure

a.) I only b.) II only
**c.) Both I and II** d.) Neither I nor II

38. When soldering a joint, the flux is used to _____.

a.) Keep the wire cool
**b.) Keep the surface clean**
c.) Lubricate the joint
d.) maintain a tight connection

39. A commutator is _____.

a.) A ditching machine
b.) The inter-poles of a generator
**c.) A device for causing the alternating currents generated in the armature to flow in the same direction in the external circuit**
d.) A transformer with a common conductor

40. The voltage of a circuit is best defined as _____.

a.) The potential between two conductors.
b.) The greatest difference of potential between two conductors.
**c.) The effective difference of potential between two conductors.**
d.) The average RMS difference of potential between any two conductors.

RME TRIVIA #2

1. Electrical current is measured in terms of _____.

a.) Electron pressure
**b.) Electrons passing a point per second**
c.) watts
d.) Resistance

2. When drilling into a steel I-beam, the most likely cause for breaking a drill bit would be ____.

a.) The drill bit is too dull
b.) Too slow a drill speed
**c.) Too much pressure on the bit**
d.) Too much cutting oil on bit

3. To sharpen an electrician's knife, you would use a _____ stone.

a.) Rubber **b.) Carborundum** c.) Rosin d.) Bakelite

4. Silver is used on electrical contacts to _____.

a.) Avoid corrosion
b.) Improve efficiency
**c.) Improve continuity**
d.) Improve appearance

5. To cut rigid conduit you should _____.

a.) Use a 3-wheel pipe cutter
b.) Use a cold chisel and ream the ends
**c.) Use a hacksaw and ream the ends**
d.) Order it cut to size

6. To determine if the raceway is truly vertical an electrician would use a _____.

a.) Plumb bob
b.) Transit level
c.) Square
**d.) Level**

7. A wattmeter is connected in ____ in the circuit.

a.) Series
b.) Parallel
**c.) Series-Parallel**
d.) None of these

8. The term "ampere-hours" is associated with _____.

a.) Motors b.) Transformers
c.) Electromagnets **d.) Storage Batteries**

9. An electron is _____.
a.) A neutron
b.) An orbiting particle
c.) A proton
**d.) The smallest part of an atom with a negative charge**

10. The transformer output is measured by _____.

a.) Volts b.) Amps **c.) Volt-amps** d.) Watts

11. The frame of a motor is usually positively grounded to _____.

**a.) Protect against shock**
b.) Remove the static currents
c.) Provide 115 volts
d.) Protect from lightning

12. A stranded wire is given the same size designation as a solid wire if it has the same ____.

a.) Weight per foot c.) Strength
b.) Overall diameter **d.) Cross-sectional area**

13. A set of lights switched from three different places can be controlled by _____ switch (es).

a.) **Two 3-way and one 4-way** c.) 2 single-pole
b.) Two 3way and one 2way d.) Four pole

14. All wiring must be installed so that when completed _____.

a.) It meets the current-carrying requirements of the load
**b.) It is free of shorts and unintentional grounds**
c.) It is acceptable to Code compliance authorities
d.) It will withstand a hi-pot test

15. _____ is the ability of a material to permit the flow of electrons.
a.) Voltage b.) Current c.) Resistance **d.) Conductance**

16. Fractional horsepower universal motors have brushes usually made of _____.

a.) Copper strands b.) Mica **c.) Carbon** d.) Thin wire rings

17. Pigtails are used on brushes to _____.

a.) Compensate for wear
b.) Supply the proper brush tension
**c.) Make a good electrical connection**
d.) Hold the brush in the holder

18. As compared with solid wire, stranded wire of the same gauge size is ____.

a.) Better for higher voltages c.) Easier to skin
**b.)** Given a higher ampacity **d.) Larger in total diameter**

19. The resistance of a copper wire to the flow of electricity _____.

a.) Decreases as the length of the wire increases
b.) Decreases as the diameter of the wire decreases
c.) Increases as the diameter of the wire increases
**d.) Increases as the length of the wire increases**

20. Mandatory rules of the Code are identified by the use of the word _____.
a.) Should **b.) Shall** c.) Must d.) Could

21. Batteries supply ___ current.

a.) Positive b.) Negative **c.) Direct** d.) Alternating

22. Alternating currents may be increased or decreased by means of a _____.
a.) Motor **b.) Transformer** c.) Dynamo d.) Megger

23. Which has the highest electrical resistance?

a.) Brass b.) Iron c.) Water **d.) Paper**

24. Conductor sizes are expressed _____.
a.) Only in circular mils c.) In diameter or area
b.) **In AWG or in circular mils** d.) In AWG or millimeters

25. A (an) ____ changes AC to DC.

a.) Battery b.) Capacitor c.) Alternator **d.) Rectifier**

26. Of the following, the best indication of the condition of the charge of a lead acid battery is the _____.

a.) Temperature of the electrolyte c.) Open circuit cell voltage
b.) Level of the electrolyte **d.) Specific gravity**
27. An advantage that rubber insulation has is that it _____.

a.) Is not damaged by oil **c.) Does not absorb much moisture**
b.) Is good for extreme temperatures d.) Will not deteriorate with age

28. When the size # 12 of a stranded wire is referred to, this number specifies the:

a.) Strength of wire c.) Square inch area of the insulation
b.) **Cross-sectional area of the wire** d.) The pounds per square inch

29. To increase the life of an incandescent light bulb you could _____.

a.) Use at a higher than rated voltage c.) Turn off when not in use
b.) **Use at a lower than rated voltage** d.) Use at a higher wattage

30. To increase the life of an incandescent light bulb you could _____.

a.) Use at a higher than rated voltage c.) Turn off when not in use
b.) **Use at a lower than rated voltage** d.) Use at a higher wattage

31. An electron is _____.

b.) A neutron
b.) An orbiting particle
c.) A proton
**d.) The smallest part of an atom with a negative charge**

32. A "Mil" measures _____.
a.) 1/8" b.) 0.000001" **c.) 0.001"** d.)0.00010"

33. The letters DPDT are used to identify a type of ____.

a.) Insulation b.) Fuse c.) Motor **d.) Switch**

34. The output winding of a transformer is called the _____.

a.) Primary b.) Output **c.) Secondary** d.) Both a & b

35. If a test lamp lights when placed in series with a condenser and a suitable source of DC, it is a good indication that the condenser is _____.

a.) Full charged
**b.) Short circuited**
c.) Open-circuited
d.) Fully discharged

RME TRIVIA #3

1. A low energy power circuit _____.

a.) Is a remote-control circuit
b.) Is a signal circuit
**c.) Has its power supplied by transformers and batteries**
d.) None of these

2. A pendant fixture is a ____.
**a.) Hanging fixture**
b.) Recessed fixture
c.) Bracket fixture
d.) None of these

3. A multimeter is a combination of _____.
a.) Ammeter, ohmmeter, and wattmeter
**b.) Voltmeter, ohmmeter, ammeter**
c.) Voltmeter, ammeter, and megger
d.) Voltmeter, wattmeter, ammeter

4. The total opposition to current flow in an AC circuit is expressed in ohms and is called ____.
a.) **Impedance** b.) Conductance c.) Reluctance d.) Resistance

5. The electric pressure of a circuit would be the _____
b.) **Voltage** b.) Amperage c.) Resistance d.) Wattage

6. Three-way switching does not use the following conductor:
a.) Ungrounded b.) Traveler **c.) Grounded** d.) Switch leg

7. Electricity is sold by the kilowatt which is _____ watts.
a.) 10,000 **b.) 1000** c.) 100 d.) 100,000

8. The current-carrying capacity of conductors expressed in amperes is _____.
a.) Demand b.) Pressure **c.) Ampacity** d.) Duty-cycle

9. The _____ angle is the angle between the real power and the apparent power.
a.) Lag **b.) Power factor** c.) Voltage-current d.) Watt

10. The efficiency of a motor is measure of _____.
a.) The natural speed of the motor
b.) The torque the motor produces
**c.) How well it converts electrical energy into mechanical energy**
d.) The power output of the motor in horsepower

11. Metal cabinets used for lighting circuits are grounded to _____.
**a.) Reduce shock hazard**
b.) Eliminate electrolysis
c.) Assure that the fuse will blow in a defective circuit
d.) Simplify the wiring

12. The larger the conductor, the _____.
a.) Higher the resistance c.) Higher the voltage
b.) Lower the ampacity **d.) Lower the resistance**

13. Receptacles in residential wiring are regularly connected in _____.
a.) **Parallel** b.) Perpendicular c.) Series d.) Diagonal

14. When applying rubber tape to an electrical splice, it would be necessary to _____.

**a.) Stretch the tape properly during the application**
b.) Apply an adhesive to the splice before applying the tape
c.) Apply the rubber tape after any other tape
d.) Apply heat to the tape when installing

15. Which type of the following portable fire extinguishers should be used on a live electrical fire?
a.) **Carbon dioxide** b.) Water c.) Foamd.) Soda-acid

16. Brass is an alloy of _____.

**a.) Zinc and copper**
b.) Lead and copper
c.) Tin and lead
d.) Lead and tin

17. The term "open circuit" means _____.

a.) The wire is in an open area
b.) The wiring is exposed on a building
**c.) All parts of the circuit are not in contact**
d.) The circuit has one end exposed

18. Silver and gold are better conductors of electricity than copper; however, the main reason copper is used is its _____.
a.) Weight b.) Strength c.) Melting point **d.) Cost is less**

19. At least two persons are required to be present during a high-voltage test because _____.

a.) One person can cover while the one is on break
b.) High voltage is too heavy for one
**c.) If one person is hurt the other person can help**
d.) It eliminates over time

20. The Code considers low voltage to be _____.
a.) 480 volts or less **b.) 6oo volts or less** c.) 24 volts d.) 12 volts

21. When accidentally splashing a chemical into the eyes the best immediate first aid solution is to _____.

a.) Look directly into the sun **c.) Flush eyes with clean water**
b.) Rub eyes with dry cloth d.) Close eyes quickly

22. A single-pole switch to operate a light will have the wiring connected in the ____ conductor.
a.) Grounded b.) Identified **c.) Ungrounded** d.) Neutral

23. If the voltage is doubled the ampacity of a conductor _____.
a.) Increase b.) Decrease c.) Doubled **d.) Remains the same**

24. A load is considered to be continuous if it is expected to continue for _____.
a.) ½ hour b.) 1 hour c.) 2 hours **d.) 3 hours**

25. The output rating of a one horsepower motor is _____.
a.)1840 watts **b.) 746 watts** c.) 1500 watts d.) 1000watts

26. A generator exciter uses _____ current.

a.) Alternating
**b.) Direct**
c.) Neither alternating nor direct
d.) Either alternating or direct

27. The heating element in a toaster has a _____.

a.) Low resistance c.) High conductivity
b.) **High resistance** d.) None of these

28. When working near acid storage batteries, extreme care should be taken to guard against sparks, essentially to avoid _____.

a.) Overheating the electrolyte c.) A short circuit
b.) An electric shock **d.) An explosion**

29. What is meant by "traveler wire"?

a.) Wiring to a split receptacles c.) Wiring to a door bell
b.) **Two-wire between 3-way switches** d.) Out of state electrician

30. The _____ circuit is that portion of a wring system beyond the final overcurrent protection.
a.) Lighting b.) Feeder c.) Signal**d.) Branch**

31. Ohm's law is _____.

**a.)** An equation for determining power
**b.)** The relationship between voltage, current and power
**c.) The relation between, current and resistance**
**d.)** A measurement of wattage losses

32. If a live conductor is contacted accidentally, the severinity of the electrical shock is determined primarily by _____.

a.) The size of the conductor c.) The current in the conductor
b.) Whether the current is DC or AC **d.) The contact resistance**

33. A solenoid is _____.
a.) Relay b.) Permanent magnet c.) Dynamo **d.) Electromagnet**

34. The Code requires which of the following colors for the equipment grounding conductor?

a.) White or gray c.) Yellow
b.) **Green or green with yellow stripes** d.) Blue with yellow stripes

35. If a 120 volt incandescent light bulb is operating at a voltage of 125 volts, the result will be _____.

a.) It may be enough to blow a fuse
b.) The bulb won't be as bright
**c.) Shorter life of the bulb**
d.) The wattage will be less than rated

36. The reason for installing electrical conductors in a conduit is ____.

a.) To provide a ground
b.) To increase the ampacity of the conductors
**c.) To protect the conductors from damage**
d.) To avoid derating for continuous loading of conductors

37. Explanatory material in the Code is characterized by _____.

a.) The word "shall"

**b.) FPN**
c.) The word "may"
d.) the word "could"

38. The advantage of AC over DC includes which of the following?

a.) Better speed control **c.) Ease of voltage variation**
b.) Lower resistance at higher current d.) Impedance is greater

39. The _____ circuit is that portion of a wring system beyond the final overcurrent protection.
a.) Lighting **b.) Feeder** c.) Signal d.) Branch

40. A wattmeter is a combination of which two of the following meters?

I. Ammeter II. Ohmmeter III. Phase meter IV. Voltmeter V. Power factor meter

a.) II and III b.) I and V **c.) I and IV** d.) II and V

41. A switch which opens automatically when the current exceeds a predetermined limit would be called a _____.
a.) Limit Switch **b.) Circuit breaker** c.) DT disconnects d.) Contactor

42. An instrument that measures electrical energy is called the _____.

a.) Galvanometer
b.) Wattmeter
c.) Dynamometer
**d.) watt-hour meter**

43. The "stator" of an AC generator is another name for the _____.

a.) Rotating portion
b.) Slip rings
**c.) Stationary portion**
d.) Housing

44. If the current flow through a conductor is increased, the magnetic field around the conductor _____.

a.) Is unchanged
**b.) Becomes stronger**
c.) Collapses
d.) Becomes weaker

45. Comparing a #6 conductor to a #10 conductor of equal lengths, the #6 will have lower ___.
a.) Cost b.) Weight **c.) Resistance** d.) Strength

46. The definition of ambient temperature is _____.

a.) The temperature of the conductor
b.) The insulation rating of the conductor
**c.) The temperature of the area surrounding the conductor**
d.) The differential temperature

47. The primary reason for using a hacksaw blade with fine teeth rather than coarse teeth when cutting large stranded conductors is _____.

a.) A coarse blade would overheat the conductor
b.) A coarse blade breaks too easily
**c.) To avoid snagging or pulling strands**
d.) A fine blade will bend easier

48. The standard residential service is a 3-wire, 240 volt single-phase system. The maximum voltage to ground in this system would be _____ volts.

a.) 115 **b.) 120** c.) 199 d.) 208

49. When working on a motor, the electrician should _____ to prevent accidental starting of the motor.

a.) **Remove the fuses** c.) Shut off the switch
b.) Ground the motor d.) Remove the belts

50. It is the responsibility of the electrician to make sure his tools are in good condition because _____.

**a.) Defective tools can cause accidents**
b.) The boss may want use them
c.) The company will pay only for only one set of tools
d.) A good job requires perfect tools

RME TRIVIA #4

1. 3Ø currents are generally out of phase by_____ degrees.
   (a) 30 (b) 60 (c) 90 **(d) 120**

2. The greatest voltage drop in a circuit will occur when the_____ the current flow through that part of the circuit.

   **(a) greater** (b) slower (c) faster (d) lower

3. _____result in loss of electrical energy from the circuit.

   **(a) resistance** (b) Reluctance (c) Susceptance (d) Admittance

4. A length of wire has a resistance of 6 ohms. The resistance of the wire of the same material three times as long and twice the csa will be_____ ohms.

   (a) 36 (b) 12 **(c) 9** (d) 1

5. The purpose of in an electrical circuit is to _____.
   **(a) utilize electrical energy** (b) increase the current (c) decrease the current (d) none of these

6. Electrical appliances are connected in parallel because it_____.

   **(a) makes the operation of appliances independent of each other**
   (b) result in reduced power loss
   (c) in a simple circuit
   (d) draw less current

7. Basically all electric motors operate on the principle of repulsion or_____.
   (a) magnetism **(b) induction** (c) resistance (d) capacitance

8. An electrician in the industry would first check the_____to correct a low power factor.
   (a) resistance (b) hysteresis **(c) inductive load** (d) reluctance

9. The breakdown voltage of an insulation depends upon _____value of AC voltage.
   (a) r.m.s (b) effective **(c) peak** (d) 1.732 of peak

10. As the power factor of a circuit is increased _____.
    **(a) reactive power is decreased** (b) active power is decreased
    (c) reactive power is increased (d) both active and reactive power are increased

11. The voltage per turn of the primary of transformer is_____ the voltage per turn of the secondary.
    (a) more than **(b) the same as** (c) less than (d) none of these

12. _____ equipment of materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation that maintain periodic inspection of equipment or materials and indicates compliance with appropriate standards or performance.
    (a) Listed **(b) Labeled** (c) Approved (d) Tested

13. A _____of a switch is that part of a switch which is used for the making or breaking of a connection and which is electrically insulated from other contact making or breaking parts.
    (a) line terminal **(b) pole** (c) contact block (d) operating yoke

14. _____ means that equipment is not readily accessible to persons unless special means for access are used.
    **(a) Isolated** (b) Guarded (c) Elevated (d) Concealed

15. _____location are those that are hazardous because of the presence of easily ignitable fibers or flying.
    (a) Class I (b) Class II **(c) Class III** (d) Class II, division II

16. A transformer would mostly likely have an efficiency of _____ percent.
    (a) 60 (b) 70 (c) 80 **(d) 90**

17. The difference between a neutral and a grounded circuit conductor is_____.
    (a) only a neutral will have equal potential to the ungrounded conductor
    (b) only a neutrals outer covering is white or natural gray
    **(c) only a neutral carries unbalanced current**
    (d) there is no difference

18. A piece of electrical equipment that is designed to operate intervals of (10 load and no load; or (2) load and rest; or (3) load, no load, and rest is called_____ duty.
    (a) short time **(b) intermittent** (c) periodic (d) varying

19. An electrical outlet constructed so that moisture will not enter the enclosure is classified as being _____.
    (a) waterproof (b) rainproof **(c) watertight** (d) weatherproof

20. You have an adjustable trip coil rated at 5 amps on a 200-am switch. If you want the switch to trip at 120 amps, the trip coil should be set at_____.
    (a) 2 amps **(b) 3 amps** (c) 4 amps (d) 5 amps

21. The instrument used to indicate phase relation between current and voltage is the_____ .
    (a) megger **(b) power factor meter** (c) voltmeter (d) galvanometer

22. Reactance will cause the current in a circuit to vary only when_____.
**(a) AC current flows** (b) DC current flows
(c) there is no resistance in the circuit (d) there is resistance in the circuit

23. Which two conductors installed in a conduit can be filled to_____% of its cross section.
(a) 53 **(b) 31** (c) 40 (d) 60

24. Relay contacts are made of _____ .
(a) copper (b) aluminum **(c) silver** (d) gold

25. A device that serves to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected is called a_____ .
(a) switch (b) control-switch (c) feeder **(d) controller**

26. Operation of equipment in excess of normal, full-load rating, or a conductor in excess of rated ampacity which, when it persists of a sufficient length of time, would cause damage or dangerous overheating is called_____.
(a) a short-circuit **(b) an overload** (c) a ground-fault (d) induction

27. A qualifying term indicating that the circuit breaker can be set to trip at various of current and/or time within a predetermined range is called_____.
**(a) adjustable** (b) instantaneous trip (c) setting (d) inverse time

28. A motor control circuit is the circuit of a control apparatus or system that carries the____.
(a) load (b) power **(c) signals** (d) energy

29. Encased with a material or composition or thickness that is not recognized by the Code as electrical insulation is defined as a covered _____.

(a) cable (b) conduit (c) wire **(d) conductor**

30. Interior location protected from weather but subject to moderate degrees of moisture, such as some basements, some barns, some cold-storage warehouse and like, the partially protected location under canopies, marquees, roofed open porches, and the like, shall be required to have fixtures marked "Suitable for_____ locations."

(a) dry **(b) damp** (c) moist (d) wet

31. Enclosure overcurrrent devices shall be mounted in a _____ position unless in individual instances this is shown to be impracticable and is installed in accordance with 240-81.

(a) horizontal (b) diagonal (c) overcurrrent device **(d) vertical**

32. A ground is a conducting connection, whether _____or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

(a) identifying **(b) intentional** (c) conducted (d) none of these

33. Readily accessible is_____.
(a) requiring a 6 foot ladder (b) requiring to move only small obstacles
(c) within 50 feet **(d) capable of being reached quickly for operation**

34. A fitting is_____.
(a) part of wiring system that is intended primary to perform an electrical function
(b) pulling cable into a proper for
(c) to suitable or proper for
**(d) part of a wiring system that is intended primarily to perform a mechanical function.**

35. An electric circuit that controls another circuit through a relay is a_____ circuit.

**(a) a remote-control** (b) pilot (c) low-energy power (d) transfer

36. Power in a three phase system may be measured with a minimum of_____.

**(a) one wattmeter** (b) two voltmeters
(c) two ammeters (d) none of these

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

**(a) guarded** (b) protected (c) isolated (d) enclosed

38. Without live parts exposed to a person on the operating side of the equipment is called _____.
**(a) dead front** (b) isolated (c) externally operable (d) interrupted

39. Fixture wire shall not be smaller than #_____.
(a) 16 **(b) 18** (c) 20 (d) 22

40. The ability of a device to open the maximum short or overload at the device, at a particular point in the electrical system is its_____ capacity.
(a) operating **(b) interrupting** (c) maximum (d) rated

41. The volt-ampere rating in an AC circuit is a way to indicate _____ power.
(a) true (b) real **(c) apparent** (d) peak

42. The function definition is self-acting, operating by its own mechanism when actuated by some impersonal influence such as _____.
(a) a change in current strength (b) temperature
(c) mechanical configuration **(d) all of these**

43. The current will lag the voltage when ____ is present in the circuit.
(a) capacitance **(b) inductance** (c) reluctance (d) resistance

44. The relationship of a transformer primary winding to the secondary winding is expressed in _____.
(a) wattage (b) volt-amp **(c) turn-ratio** (d) amps

45. For better illumination you would use _____.
(a) random spacing of lights (b) evenly spaced lights, higher ceilings
**(c) even spacing, numerous lights** (d) cluster lights

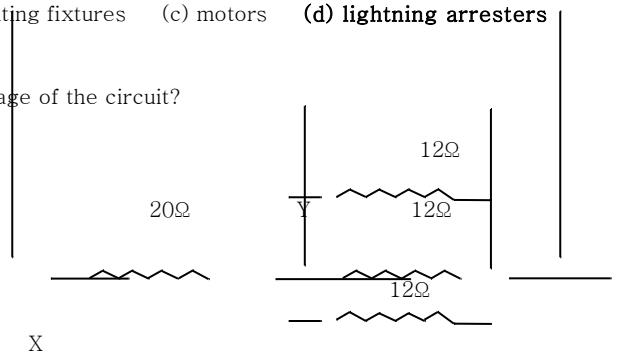
46. The equipment used to measure and compare peak, average, and root-mean-square values on an AC voltage curve is called a ____.
(a) hydrometer **(b) oscilloscope** (c) thermal couple (d) mandrel

47. A DC voltmeter can be used directly to measure which of the following?
(a) cycles per second (b) power factor (c) power **(d) polarity**

48. With respect to the safety value of insulation on electrical tools, it can be correctly stated that_____.
**(a) the insulation should not be used as the only protective measure**
(b) the insulation provides very little protection
(c) the insulation provides complete safety to the user
(d) insulation is really not needed

49. _____ may be connected ahead of the main service switch.
(a) nothing (b) lighting fixtures (c) motors **(d) lightning arresters**

50. What is the total wattage of the circuit?




EACH OF THE 12 OHM LOADS IS 2 AMPERES

(a) 1536 watts **(b) 864 watts** (c) 336 watts (d) 192 watts

RME TRIVIA #5

1. In the course of normal operation the instrument which will be least effective in indicating that the generator may overheat because it is overloaded is _____.
(a) a stator thermocouple (b) a wattmeter
**(c) a voltmeter** (d) an ammeter

2. The conductor used to connect the grounded circuit of a wiring of a wiring system to a grounding electrode is the _____.
(a) grounded conductor (b) bonding jumper
(c) main bonding jumper **(d) grounding conductor**

3. In a highly inductive AC circuit, what devised is used to correct the power factor towards unity?
(a) resistor (b) inductor (c) capacitor **(d) rectifier**

4. In other than residential calculations, an ordinary outlet shall be calculated at _____.
(a) 660va (b) 746w (c) 2 amps **(d) 180va**

5. A Clamp-on ammeter will measure _____.
(a) voltage when clamped on a single conductor

(b) current when clamped on a multiconductor
(c) accurately only when parallel to cable
**(d) accurately only when clamped perpendicular to a conductor**

6. The purpose of locknuts in making electrical connections on studs is to _____.
**(a) prevent the connection from loosening under vibration**
(b) connect multiple conductor on the stud
(c) make the connection tamperproof
(d) avoid having the torque the studs

7. The words "thermally protected" appearing on the nameplate of a motor indicates that the motor is provided with a _____.
(a) switch (b) fuse (c) breaker **(d) heat sensing**

8. True power is always voltage time's current _____.
(a) in an AC circuit
**(b) in a DC circuit**
(c) where frequency is constant
(d) regardless of whether capacitive reactance is in circuit or not

9. Grounding the metallic cover of flexible metal conduit and armored cable, is for protection against _____.
**(a) shock or injury** (b) lightning
(c) open filed shorts (d) change in frequency

10. In a multiple motor circuit there is feeder protection, branch-circuit protection and motor protection. If the feeder protection trips, the fault would be expected to be in _____.
(a) one of the motors (b) one of the branch-circuit
**(c) the feeder** (d) one of the starters

11. A branch circuit that supplies a number of outlets for lighting and appliances is known as a ____ branch-circuit.
(a) general purpose (b) multi-purpose (c) utility (d) none of these

12. Which of the following is not a factor in calculating the feeder conductor size?
(a) ambient temperature (b) branch-circuit protection
(c) voltage drop **(d) demand factor**

13. Voltage drop in a conductor is _____.
(a) the conductor resistance times the voltage
(b) a function of insulation
(c) part of a load voltage
**(d) a percentage of the applied voltage**

14. The ratio of the maximum demand of the system to the total connected load of the system is called the ____ of the system.
(a) connected load (b) nameplate **(c) demand factor** (d) turn-ratio

15. Electrical equipment can be defined as _____.
I. fitting II. appliances III. devices IV. Fixtures
(a) I only (b) I and IV only (c) I, III and IV **(d) I, II, III and IV**

16. _____ duty is a type of service where both the load and the time intervals may have wide variations.
(a) continuous (b) periodic (c) intermittent **(d) varying**

17. The common fuse depends on the principle that the _____.
**(a) current flow develops heat** (b) overvoltage will expand the link
(c) increase of resistance will occur (d) voltage develops heats

18. The heating of two different metals will cause _____.
(a) corrosion (b) electron flow **(c) galvanic action** (d) fusion

19. A hickey is _____.
**(a) a tool used to bend small sizes of rigid conduit** (b) a part of conduit
(c) not used in electrical trade (d) used only by a plumber

20. The lubricant used for a motor sleeve bearing would e _____.
(a) Vaseline (b) grease **(c) oil** (d) graphite

21. A light bulb usually contains _____.
(a) air (b) neon (c) H2O **(d) either a vacuum or gas**
.

22. A ____ is an enclosure designed either for surface or flush mounting and provided with a frame, mat, or trim in which a swinging door or doors are or may be hung.
**(a) cabinet** (b) panel board (c) cutout box (d) switchboard

23. A requirement of service that demands operation for alternate intervals of (1) load no load; or (2) load and rest; or (3) load, no load, and rest is called ____ duty.
(a) variable **(b) intermittent** (c) short-time (d) periodic

24. Approved is _____.
(a) listed and labeled equipment
**(b) acceptable to the authority having jurisdiction**
(c) tested and approved for the purpose by a qualified testing lab
(d) UL listed only

25. The type letter for moisture-resistant thermoset is _____.
(a) RUH (b) THW **(c) RHW** (d) MHR

26. A current-limiting overcurrent protective device is a device which will _____ the current flowing in the faulted circuit.
**(a) reduce** (b) increase (c) maintain (d) none of these

27. The term anode refers to _____.
(a) capacitor (b) dynamo **(c) rectifier** (d) inductor

28. When re-routing conduit, it may be necessary to increase the wire size if the distance is considerably greater, in order _____.

(a) to account for current drop (b) to allow for possible resistance drop
**(c) to compensate for voltage drop** (d) to increase mechanical strength

29. The connection between the grounded circuit conductor and the equipment grounding conductor all the service is called the _____.
(a) equipment bonding jumper **(b) main bonding jumper**
(c) circuit bonding jumper (d) electrode bonding jumper

30. To determine directly whether all finished wire installations possess resistance between conductors, and between conductors and ground, use_____.
(a) set screws (b) shields (c) clamps **(d) a megger**

31. You are to check the power factor of the load, you cannot get a power factor meter, you would use _____.
(a) a wattmeter
(b) a voltmeter and a ammeter
(c) a kilo-watt hour meter
**(d) an ammeter, a wattmeter and a voltmeter**

32. High voltage cable which is to be installed in underground ducts is generally protected with a ____.
(a) outlet outer jacket **(b) lead sheath** (c) steel wire armor (d) tarred jute covering

33. If an AC sine wave reaches a peak voltage of 100, what is the effective root-mean square voltage?
(a) 57.7 volts (b) 141.4 volts (c) 86.6 volts **(d) 70.7 volts**

34. The resistance of the filament in a light bulb is _____.
(a) usually the same at all times (b) highest when the bulb is off
(c) lowest when the bulb is on **(d) highest when the bulb is on**

35. Aluminum and copper-clad aluminum of the same circular mil and insulation have_____.
(a) the same physical characteristic (b) the same termination method
**(c) the same ampacity** (d) different ampacity

36. The main reason for using oil in a circuit breaker is to _____.
(a) lubricate the points **(b) quench the arc**
(c) increase the capacity of current (d) decrease the resistant

37. To measure AC cycles per second, you would use a _____.
(a) Hydrometer (b) manometer **(c) frequency meter** (d) power factor meter

38. Comparing incandescent lightning with fluorescent lightning at the same level of illumination, the cost of energy for fluorescent would be _____.
(a) greater **(b) less** (c) the same (d) 1.05 increase

39. Motors horsepower ratings are based on an observable safe temperature rise above ambient temperature. The ambient temperature is taken as _____ degree C.
(a) 40 (b) 45 (c) 50 (d) 60

40. A generator works on the basis of _____.
**(a) a conductor moving inside a magnetic field** (b) ozone principle
(c) a magnetic field moving around a conductor (d) none of these

41. A good insulator for very high temperature is _____.
**(a) mica** (b) rubber (c) plastic
(d) Bakelite

42. In hazardous locations which is/are factors that contributes to the need to classify the location as hazardous?

I. flammable liquids II. certain dust particles III. Proximity to local fire station

(a) I only (b) II only **(c) I or II only** (d) I, II, or III

43. The definition of a qualified person is _____.
(a) persons designed by the management of a building to supervise or work on equipment
(b) persons with a degree or license qualifying them to install, maintain, or operate a specific type of equipment or system
(c) a Master electrician
**(d) person familiar with the construction and operation of the equipment and the hazards**

44. Solders used for the connection of electrical conductors, are alloys of _____.
**(a) tin and lead** (b) copper and tin (c) zinc and lead (d) zinc and tin

45. Which of the following is best to fight electrical fires?
(a) soda-acid fire extinguisher (b) fire spray of water
(c) Foam fire extinguisher **(d) $CO_2$ fire extinguisher**

46. A low value of reactive volt-amperes in an AC circuit compared with the wattage would indicate _____.
(a) maximum power factor **(b) high power factor**
(c) maximum current for the load (d) very low efficiency

47. When the current flowing in a circuit exceeds the allowable capacity of the conductor the part of the circuit that melts is called a _____.
(a) thermal overload (b) heater (c) breaker **(d) fuse**

48. High AC voltages are usually using a _____.
(a) potential transformer and voltmeter
**(b) current transformer and a voltmeter**
(c) galvanometer in parallel
(d) manometer in series with a voltmeter

49. The basic unit of electrical work is the _____.
(a) volt-amp (b) watt **(c) watt-hour**
(d) kva

50. A motor with a wide speed range is a(n) _____.
**(a) DC motor** (b) AC motor (c) synchronous motor (d) Induction motor

RME TRIVIA #6

1. The ampacity of a single #12 (3.5mm²) fixture wire is ___ amps.
*(PEC2009 TABLE 4.2.1.5)*
(a) 20 (b) 25 **(c) 23** (d) 35

2. A 20 amp branch circuit is installed to supply receptacles for stage set lighting. The receptacles connected to this circuit shall have a minimum rating of ___ amperes.
*(PEC2009 5.30.2.11)*
(a) 15 **(b) 20** (c) 25 (d) 15 or 20

3. The rated full load current for a DC motor, 7 1/2 hp, 500v would be ___ amps.
(a) 11 (b) 13 **(c) 13.6** (d) 80

4. Transformer ventilation shall be ___ to dispose of full load losses.
(a) sufficient (b) rated **(c) adequate** (d) derived

5. In Class II locations ___ dust may dehydrate or carbonized making them even more dangerous.
(a) plastic (b) coal **(c) organic** (d) metallic

6. The alternate power source for a dentist office is required to carry the connected load for a minimum of ___ hours.
(a) 3 (b) 2 **(c) 1 1/2** (d) as long s possible

7. A rotary phase converter is a device having a rotary transformer and ___ panel (s) that can operate 3ø loads from a 1ø source.
**(a) capacitor** (b) secondary (c) primary (d) regular

8. In an elevator machine room, at least ___ receptacle(s) shall be installed.
**(a) one duplex** (b) two duplex
(c) one single (d) two receptacles, opposite walls

9. Factory assembled nonmetallic conduit with conductors is not permitted ___.
(a) in cylinder fill
**(b) in exposed indoors locations**
(c) exposed door embedded in concrete
(d) in underground locations subject to severe corrosive influences

10. The power conductors in type NMS cable are manufactured in sizes ___.
*(NMS-non-metallic sheath)
(a) #14 - #6 (2.0-14) (b) #14 - #4 (2.0-22)
**(c) #14-#2 (2.0-30)** (d) #12 - #2 (3.5-30)

11. The ampacity for branch circuit conductors supplying x-ray equipment marked (50 amps momentary) would require an ampacity of at least ___ amps.
**(a) 25** (b) 40 (c) 50 (d) 62.5

12. A/an ___ is a unitized segment of an industrial wiring system in which orderly shutdown is necessary to ensure safe operation.
(a) emergency standby electrical system
(b) selective load pick-up electrical system
(c) critical branch electrical system
**(d) integrated electrical system**

13. ___ of fuses and circuit breakers for emergency circuit overcurrent protection, will ensure selective clearing of fault currents, and increase overall reliability of the system.
(a) Frequent interchange (b) GFCI protection
(c) Manual operation **(d) Coordination**

14. Conductors that supply one or more welders shall be protected by an overcurrent device rated or set at not more than ___ of the conductor rating.
(a) 80% (b) 125% (c) 150% **(d) 300%**

15. Flat cable assemblies may be installed ___

I. for small power loads outdoors, not subject to physical damage.
II. As tap devices for lighting and small appliances
III. For small power loads in hoistways
(a) I only **(b) II only** (c) I and II only (d) I, II, and III

16. A room air conditioner rated ___ shall not be cord and plug connected.
(a) over 240 volts **(b) over 250 volts** (c) over 3 hp (d) over 5 hp

17. The area of square inches for a #6 bare conductor is ___.
*( Table 8 Chapter 9)*
(a) 0.017 **(b) 0.027** (c) 0.207 (d) 0.184

18. Which of the following is not a standard size fuse?
(a) 110 amp (b) 125 amp **(c) 75 amp** (d) 250 amp

19. Which of the following is NOT considered an electric vehicle by the code?
**(a) industrial fork lift** (b) vans (c) busses (d) trucks

20. Outlets for specific appliances such as laundry equipment shall be within ___ feet (mm) of the appliance.
(a) 4 (1200) **(b) 6 (1800)** (c) 8 (2400) (d) 10 (3000)

21. Type FCC cable wiring system is designed for installation under___.
(a) tile (b) carpet **(c) carpet squares** (d) concrete

22. Service cables mounted in contact with a building shall be supported at intervals not exceeding___.
(a) 10 (b) 6 **(c) 2 ½** (d) 4 ½

23. The temperature limitation of MI cable is based on the ___.
(a) ambient temperature (b) conductor insulation
**(c) insulating materials used in the end seal** (d) none of these

24. Wading pools are those that are constructed on or above the ground and are capable of holding water to maximum depth of ___.
(a) 18" (460) (b) 30" (760) **(c) 42" (1000)** (d) 4' (1200)

25. Over current device shall not be located in the vicinity of easily ignitable material such as in ____.
(a) bedrooms **(b) cloths closets** (c) kitchens (d) garages

26. Liquid tight flexible metal conduit is shipped in what sizes minimum and maximum?
**(a) 1/2" to 4" (10-100mm)** (b) 1/2" to 6" (10-150mm)
(c) 3/4" to 5" (19-125mm) (d) 1/2" to 2" (10-50mm)

27. Flexible cord shall be considered as protected by a 20 amp branch circuit over current device if the cord is ___.

(a) not less than 6' in length (b) #20 or larger
**(c) #18 or larger** (d) #16 or larger

28. 15 and 20 ampere receptacles located in pediatric areas shall be ___.
**(a) tampered resistance** (b) isolated
(c) GFI (d) specification grade

29. Type MTW insulation would be used for ___.

(a) switch boards only **(b) machine tool wiring**
(c) feeders only (d) fixtures

30. Emergency lighting, emergency power or both, in a building or group of building will be available within the time required for the application, but not to exceed one of the following:

(a) 5 seconds **(b) 10 seconds** (c) 30 seconds (d) 60 seconds

31. Open conductors run individually as service drops shall be ___.

I. insulated II. bare III. Covered

(a) I only (b) II only (c) III only **(d) either I or III**

32. Open conductors on insulators must be covered when they are within ___ feet (mm) of a building.

**(a) 10 (3000)** (b) 12 (3600) (c) 15 (4600) (d) 25 (7600)

33. The Code requires all conductors carrying AC current installed in metal raceways to be grouped together because ___.

(a) it's cheaper (b) it's easier to test
(c) it's easier to maintain **(d) of inductive current**

34. Flexible cord to portable electrically heated appliances rated at more than ___ watts shall be approved for heating cords.

**(a) 50** (b) 100 (c) 300 (d) 500

35. Compliance with the provisions of the Code will result in ___.

(a) good electrical service (b) an efficient system
(c) freedom from hazard **(d) all of these**

RME TRIVIA #7

1. A 1000 watt incandescent lamp shall have a ___ base.
**(a) mogul** (b) standard (c) admedium (d) copper

2. Escalator motors shall be classified as ___ duty.

(a) intermittent (b) varying (c) short-time **(d) continuous**

3. Splices and taps shall be permitted within a wireway provided they are accessible. The conductor including splices and taps shall not fill the wireway to more than ___ percent of its area at that point.

(a) 25 (b) 80 (c) 125 **(d) 75**

4. The grounding conductor for a TV antenna shall not be smaller than a ___ copper.

(a) #6 (b) #8 **(c) #10** (d) #12

5. Which of the following is not required on a motor nameplate?
(a) horsepower (b) makers name
**(c) watts** (d) voltage

6. For a feeder supplying household cooking equipment and electric clothes dryers the minimum unbalance load on the neutral conductor shall be considered as ___ percent of the loads on the ungrounded conductors.

(a) 40 (b) 50 **(c) 70** (d) 80

7. In other than dwelling-type occupancies, each electrically heated appliance or group of appliances intended to be applied to combustible material shall be provided with a ___.

(a) light (b) thermostat **(c) signal** (d) warning

8. Receptacles located over ___ feet above the floor are not counted in the required number of receptacles along the wall.
(a) 4 (b) 5 **(c) 5 1/2** (d) none of these

9. Circuits of electrical cranes operating in Class III locations over combustible fibers shall not be ___.
**(a) grounded** (b) pulled in raceway (c) spliced (d) THWN conductors

10. A transverse metal race way for electrical conductors furnishing access to predetermined cells of a precast cellular concrete floor, which permits installation of conductors from a distribution center to the floor cells is called ___.
(a) an underfloor raceway **(b) a header**
(c) a cellular raceway (d) a mandrel

11. A 30 amp remote panelboard containing conductors protected by a 30 amp fuses shall have a ___ equipment grounding conductor minimum.

(a) #12 **(b) #10** (c) #8 (d) #6

12. The maximum rating of a plug fuse is ___ amps.
(a) 20 **(b) 30** (c) 15 (d) 40

13. Multi-outlet assembly may be used ___.

(a) where concealed (b) in hoistways
**(c) in dry location** (d) in storage battery rooms

14. Where raceway-type service masts are used, all raceway fitting shall be ___ for use with service masts.

**(a) identified** (b) approved
(c) heavy-duty (d) none of these

15. The height of a circuit breaker used as a switch shall not exceed ___ feet above the floor.
(a) 4 (b) 4 1/2 (c)5 **(d) 6' 7''**

16. How would you connect the grounding system conductor to the grounding electrode?

(a) grounded conductor **(b) grounding conductor**
(c) bonding jumper (d) main bonding jumper

17. Underground service conductors must have a rating not smaller than ___.

(a) #3 (b) #4 (c) #6 **(d) #8**

18. Insulated wires shall be marked or tagged with which of the following?

(a) maximum rated voltage
(b) proper type letters
(c) manufacturer identification
**(d) all of these**

19. Which of the following applies to Class I Division I locations?

**(a) ignitable flammable gases and vapors**
(b) grain silos
(c) ignitable fibers or flying
(d) combustible dust

20. Tap conductors for household cooking equipment supplied from a 50 amp branch circuit shall have an ampacity of not less than ___.

(a) 50 (b) 70 **(c) 20** (d) 80

21. A lighting and appliance branch circuit panel board contains six-3 pole circuit breakers and eight-2 pole circuit breakers. The maximum allowable single pole circuit breakers permitted to be added is ___.
**(a) 8** (b) 16 (c) 28 (d) 12

22. ___ and larger grounding electrode conductors shall be protected where exposed to severe physical damage.
(a) #8 **(b) #4** (c) #2 (d) #6

23. If a protective device rating is marked on an appliance, the branch circuit overcurrent device rating shall not exceed ___ the protective device rating marked on the appliance.

**(a) at all** (b) more than 50% (c) 80% (d) 125%

24. The conduit or raceways, including their end fittings, shall not raise more than ___ inches above the bottom of the enclosure.

**(a) 3** (b) 4 (c) 5 (d) 6

25. Panelboards, switches, gutters, wireways or transformers are permitted to be mounted above or below one another if ___.

(a) rated 300v or less
(b) flush along the back edge
**(c) extend not more than 6 inches beyond the front of the equipment**
(d) flush along the front edge

26. The minimum size conductor of lighting elevator circuits travelling cables is ___.
(a) #12 (b) #18 (c) #16 **(d) #14**

27. Transformers rated over ___ KV shall be in a vault.
(a) 10 (b) 12 1/2 (c) 25 **(d) 35**

28. ___ shall be permitted to be installed in concrete, in direct contact with the earth, or in areas subject to severe corrosive influences where protected by corrosion protected and judged suitable for the condition.

(a) PVC (b) Ceramic (c) Orange burg **(d) Rigid metal conduit**

29. An overcurrent trip unit of a circuit shall be connected in series with each ___.

**(a) underground conductor** (b) grounded conductor
(c) overcurrent device (d) transformer

30. The grounded conductor of a mineral-insulated, metal-sheathed cable shall be identified at the time of installation by ___ marking at its termination.

**(a) distinctive** (b) neutral (c) solid (d) identified

31. All boxes and enclosures for emergency circuits shall be marked so they will be ___ as a component of an emergency circuit.

**(a) readily identified** (b) recognized (c) easily sighted (d) classified

32. On a delta three-phase, 4-wire system, how many hot wires may use a common neutral?

**(a) 2** (b) 3 (c) 4 (d) 6

33. All of the following may be used on services of 2300/4600v. except ___.

**(a) MI cable** (b) MV cable (c) cable bus (d) busway

34. A unit or assembly of units or sections, and associated fittings, forming a rigid structural system used to securely fasten or support cables and raceways is a ___.

(a) flat cable assembly (b) wireway (c) multioutlet assembly **(d) cable tray system**

35. Any motor application shall be considered as ___ unless the nature of the apparatus it drives is such that the motor will not operate continuously with load under any condition of use.

(a) short-time duty (b) varying duty
**(c) continuous duty** (d) periodic duty

RME TRIVIA #8

1. The minimum size service for a mobile home in a mobile home park is ___ amps.
   (a) 80 (b) 70 (c) 200 (d) 100

2. Conductors ___ and larger shall be stranded when installed in raceways.

   (a) #12 (b) #10 (c) #8 (d) none of these

3. Cable tray system shall not be used in ___ or where subject to severe physical damage.

   (a) tunnels (b) hoistways (c) hazardous location (d) 600 volts system

4. A night club lighting dimmer installed in an undergrounded conductor shall have overcurrent protection rated at no more than ___ percent.
   (a) 50 (b) 70 (c) 80 (d) 125

5. The ampacity of the phase conductor from the generator terminals to the first overcurrent device shall not be less than ___ percent of the nameplate rating of the generator.
   (a) 75 (b) 115 (c) 125 (d) 140

6. Flexible cord shall not be used as a substitute for the ___ wiring of a structure.
   (a) temporary (b) fixed (c) concealed (d) none of these

7. All electric equipment, including power supply cords, used with storable pools shall be protected by ___.
   (a) fuses (b) circuit breakers (c) double-insulation (d) GFCI

8. The short-circuit and ground-fault protective device protecting the branch circuit shall have sufficient ___ to permit the motor-compressor to start.

   (a) voltage (b) current (c) time delay (d) capacity

9. The equipment bonding jumper on the supply side of the service is sized by the rating of the ___.

   (a) overcurrent protective device
   (b) service entrance conductors
   (c) service drop
   (d) load to be served

10. The Philippine Electrical Code is ___.

    (a) intended to be a designed manual
    (b) meant to be used as an instruction manual for untrained person
    (c) the practical safeguarding of persons and property
    (d) published by Bureau of Standards

11. Rigid metal conduit shall be permitted to be installed in concrete, in direct contact with the earth, or in areas subject to severe influences where protected by ___ and judged suitable for the condition.

    (a) ceramic (b) corrosion protection (c) PVC (d) orangeburg

12. A manufactured assembly designed to support and energized lighting fixtures that are capable of being readily repositioned is ___.

    (a) ceiling grid lighting (b) electric discharge lighting
    (c) lighting track (d) open circuit lighting

13. Health care low voltage equipment frequently in contact with bodies persons shall not exceed ___ volts.

    (a) 50 (b) 115 (c) 10 (d) 550

14. The feeder of six 20 amp receptacles supplying shore power shall be calculated at ___ percent of the sum of the rating of the receptacles.
    (a) 70 (b) 80 (c) 90 (d) 100

15. A switch or circuit breaker should disconnect the grounded conductors of a circuit ___.

    (a) by hand levers only
    (b) simultaneously as it disconnects the undergrounded conductors
    (c) before it disconnects the undergrounded conductors
    (d) in none of the above ways

16. Locations where ignitable fibered and stored are designated as ___.

    (a) Class II, Division II
    (b) Class III, Division I
    (c) Class III, Division II
    (d) non-hazardous

17. In general, the voltage limitation between conductors in a surface metal raceway is ___ volts.
    (a) 300 (b) 600 (c) 900 (d) 1000

18. The grounding conductor shall be identified by ___.

    (a) one continuous green color (b) being bare
    (c) a continuous green color with yellow strips (d) any of these

19. Temporary electrical power and lighting installations shall be permitted for a period not to
    exceed ___ days.

    (a) 90 (b) 60 (c) 30 (d) 15

20. The hazardous area in a pit of a spray operation without proper vapor stop is classified as a ___ location.

    (a) Class I, Division I
    (b) Class I, Division II
    (c) Class II, Division I
    (d) Class III, Division I

21. Surge arrester grounding that run in metal enclosures should be ___.
    (a) bonded on one end of the enclosure only (b) bare
    (c) bonded at both ends of such enclosure (d) insulated

22. Color coding shall be permitted to identify ___ conductors where they are colored light blue and where no other conductors colored light blue are used.

(a) fire alarm (b) elevator (c) intrinsically safe (d) electrolytic cell

23. In using multiple grounding electrodes, they shall be separated one from the other at ___ feet distance apart.

(a) 6 (b) 8 (c) 10 (d) 12

24. Conductors shall be ___ to provide ready and safe access in the underground and subsurface enclosures, into which persons enter for installation and maintenance.

(a) readily accessible (b) exposed (c) racked (d) enclosed

25. The minimum number of receptacles in a patient bed location of a hospital general care area should be ___.

(a) one (b) two (c) three (d) four

26. Surge arrester grounding that run in metal enclosures should be ___.
(a) bonded on one end of the enclosure only (b) bare
(c) bonded at both ends of such enclosure (d) insulated

27. For a legally required standby system, power will be available for the application within ___.

(a) 30 seconds (b) 10 seconds (c) 20 minutes (d) 1 minute

28. The voltage limitations for electrical nonmetallic tubing is ___ volts.
(a) 600 (b) 500 (c) 450 (d) 300

29. Mobile home disconnecting means shall be located not less than ___ feet above finished grade or working platform.

(a) 8 (b) 6 (c) 4 (d) 2

30. Transformer and transformer vault shall be ___ to qualified personnel for inspection and maintenance.

(a) accessible (b) readily accessible (c) externally operable (d) none of these

31. Indoor antennas and indoor lead-ins shall be permitted to occupy the same box or enclosure with conductors of the other wiring system where separated from such other conductors by an effective permanently installed ___.

(a) wall (b) divider (c) insulator (d) barrier

32. Components of lighting tracks system of different voltages shall not be ___.

(a) connected (b) interchangeable (c) polarized (d) none of these

33. Lighting fixtures installed over vehicle lanes inside a commercial garages shall be installed a minimum of ___ feet.

(a) 8 (b) 10 (c) 12 (d) 15

34. The bare neutral of aluminum conductors may not be used underground on a service except ___.

(a) if protected at not more than 20a
(b) if protected with oxide inhibiter
(c) if installed in aluminum conduit
(d) where part of a cable assembly identified for direct burial

35. Capacitors containing more than ___ gallons of flammable liquid shall be enclosed in vaults so outdoor fenced enclosures.

(a) 3 (b) 5 (c) 7 (d) 10

36. A raceway contains 45 current-carrying conductors. The ampacity of each conductor shall be reduced ___ percent.

(a) 80 (b) 70 (c) 60 (d) 35

37. 3" rigid nonmetallic conduit has a maximum spacing between supports of ___.

(a) 3 (b) 5 (c) 6 (d) 8

38. Electric nonmetallic tubing is not permitted to be used in sizes up to ___.

(a) 1" (b) 2" (c) 3" (d) 4"

39. In agricultural buildings all cables shall be secured within ___ inches of a box.

(a) 6 (b) 8 (c) 12 (d) 18

40. Because aluminum is not a magnetic metal, there will be ___ present when aluminum conductors are grouped in a wireway.

(a) no heat due to voltage (b) no heat due to hysteresis
(c) no inductance currents (d) none of these

41. Each switchboard, switchboard section, or panelboard, if used as service equipment, shall be provided with ___.

(a) a main bonding jumper (b) a power circuit
(c) two hours of fuel supply (d) three hours of fuel supply

42. When a diesel engine is used as a prime mover of a generator to supply emergency power, how much of site fuel is required?

(a) one-half hour if fule supply (b) one hour of fuel
(c) two hours of fuel supply (d) three hour of fuel supply

43. Splices and taps shall not be located within fixture ___.

(a) splice boxes (b) arms and stems (c) pancake boxes (d) none of these

44. Where extensive metal in or on buildings may become energized and is subject to personal contact ___ will provide additional safety.

(a) adequate bonding and grounding (b) bonding
(c) suitable ground detectors (d) none of these

45. Solid dielectric solid conductors operated above 2000 volts in permanent installations shall have ozone-resistant insulation and shall be ___.

(a) covered (b) protected (c) shielded
(d) surface mounted

46. The ampacity requirements of x-ray equipment shall be based on ___ percent of the momentary rating of the equipment.

(a) 40 (b) 50 (c) 70 (d) 80

47. The paralleling efficiency of ground rods longer than ___ feet is improved by spacing greater than 6 feet.

(a) 8 (b) 10 (c) 15 (d) 20

48. Type USE service entrance cable, identified for underground used in a cabled assembly, may have a ___ concentric.

(a) bare copper (b) covered metal
(c) bare aluminum (d) covered

49. A ___ is a protective device for limiting surge voltages by discharging or bypassing surge current and is also prevents continued flow of follow current while remaining capable of repeating these functions.

(a) surge arrester (b) auto fuse (c) fuse (d) circuit breaker

50. All lights and any receptacles adjacent to the mirror(s) and above the dressing table counters in dressing rooms of theaters shall be controlled by wall switches installed in the ___.

(a) dressing rooms (b) control room (c) projection room (d) stage office

RME TRIVIA #9

1. The cored shall not exceed ___ feet in length for portable or mobile signs in dry locations.
(a) 6 (b) 8 (c) 10 (d) 15

2. Surface marking of conductors and cables shall be durably marked on the surface at intervals not exceeding ___ inches.
(a) 6 (b) 12 (c) 18 (d) 24

3. Fuses and circuit breakers shall be so located or ___ persons will not be burned or otherwise injured by their operation.
(a) concealed (b) guarded (c) shielded (d) elevated

4. A 50 volt generator which is driven by a single motor is protected by the overcurrent protecting the motor only when the generator is delivering no more than ___ percent of its full load rates current.
(a) 80 (b) 100 (c) 125 (d) 150

5. Each service disconnecting means shall ___ disconnect all undergrounded service conductors from the premises wiring system.
(a) automatically (b) independently (c) simultaneously (d) separately

6. A cut out box installed in a wet location shall be ___
(a) rain tight (b) weather proof (c) waterproof (d) rainproof

7. The ground fault protection system shall be tested when it is ___.
(a) installed (b) energized for the first time (c) inspected (d) manufactured

8. An underground service installed in PVC and having a 3" concrete envelope shall be buried a minimum of ___ inches.
(a) 6 (b) 12 (c) 18 (d) 24

9. A separate branch circuit shall supply the ___ receptacles, auxiliary power source, and ventilation on each elevator car.
(a) motor (b) car lights (c) emergency phone (d) emergency exit

10. In a 6-pole machine, 360 electrical degrees is equal to ___ mechanical degrees.
(a) 60 (b) 90 (c) 90 (d) 180

11. Transformer and electronic power supplies shall have secondary current ratings not more than ___ milliamperes.
(a) 300 (b) 350 (c) 400 (d) 600

12. Each commercial building and each commercial occupancy accessible to pedestrians shall be provided at an accessible location outside the entrance, with at least one ___ for sign or outline lighting use.
(a) outlet (b) duplex (c) GFCI (d) none required

13. Each commercial building and each commercial occupancy accessible to pedestrians shall be provided at an accessible location outside the entrance, with at least one ___ for sign or outline lighting use.
(a) outlet (b) duplex (c) GFCI (d) none required

14. Maximum voltage between conductors serving a submersible pump in a fountain is ___ volts.
(a) 150 (b) 250 (c) 300 (d) 600

15. Isolating switches over 600v shall be provided with a means of readily connecting the load side conductors to ground when disconnected from the ___.
(a) current (b) equipment (c) service cable (d) source of supply

16. Listed ceiling fans that do not exceed ___ pounds in weight, with or without accessories, shall be permitted to be supported by outlet boxes.
(a) 35 (b) 40 (c) 45 (d) 50

17. A run flexible metal conduit may be used as an equipment grounding conductor if the conductors are protected at ___.
(a) 20a or more (b) 20a or less (c) ungrounded (d) grounding

18. On solar photovoltaic system; Ampacity of conductors and overcurrent devices shall not less than ___ percent of the computed current.
(a) 150 (b) 100 (c) 125 (d) 200

19. Each resistance welder shall have overcurrent primary protection set at not more than ___ percent.
(a) 200 (b) 300 (c) 250 (d) 125

20. Which of the following must be provided with GFCI?
(a) a dishwashers (b)fountains (c) outdoor lights (d) refrigerators

21. A nursing home is a building or part thereof used for the lodging, boarding or nursing care, on a 24 hour basis, of ___ or more persons.
(a) 4 (b) 12 (c) 50 (d) 100

22. ___ of conductor in rigid nonmetallic conduit shall be made only in junction, outlet boxes or conduit bodies.
(a) splices (b) splices and taps (c) connections (d) none of these

23. The earth shall not be used as the sole ___ conductor.
(a) equipment grounding (b) grounded (c) neutral (d) bonding

24. Insulating bushings are required on conduit entering boxes, gutters, etc. if it contains conductors as large as ___.
(a) #2 (b) #4 (c) #0 (d) #6

25. When supplying nominal 120 volt rated room air-conditioner, the length of the flexible supply cords shall not exceed ___ feet.
(a) 4 (b) 6 (c) 8 (d) 10

26. A storage battery supplying emergency lighting and power shall maintain not less than 87 1/2 percent of full voltage at total load for a period of at least ___.
(a) 2 hours (b) 1 1/2 hours (c) 1 hour (d) 1/4 hour

27. According to the Code, conductors on poles, where not placed on racks or brackets, shall be supported not less than ___.
(a) 6" (b) 12" (c) 18" (d) 24"

28. The minimum length of free conductors left at each outlet and switch point in a dwelling shall not be less than ___ inches.
(a) 4 (b) 6 (c) 8 (d) 10

29. The largest stranded conductor permitted to be connected to terminals by means of upturned lugs is ___ AWG.
(a) #8 (b) #6 (c) #10 (d) #12

30. The grounding electrode conductor shall be ___ and shall be installed in one continuous length without a space or joint.

I. solid II. solid or stranded III. insulated, covered or bare
(a) I only (b) I and III (c) II and III (d) III only

31. Conductor supplying several motors shall have an ampacity equal to the sum of the full-load current rating of all the motors plus ___ % of the highest rated motor in the group.
(a) 25 (b) 80 (c) 100 (d) 125

32. Power feed, grounding connection, and shiled system connection between the FCC system and other wiring systems shall be accomplished in a ___.
(a) transition assembly (b) raceway (c) trench (d) none of these

33. The ampacity of capacitor circuit conductor shall not be less than ___ percent of the rated current of the capacitor.
(a) 100 (b) 125 (c) 135 (d) 150

34. A bare #4 conductor may be concrete-encased and service as the grounding electrode when at least ___ feet in length.
(a) 25 (b) 15 (c) 10 (d) 15

35. On circuits of 600 volts or less, overhead spans up to 50 feet in length shall have conductors not smaller than ___.
(a) #4 (b) #12 (c) #6 (d) #10

36. Listed or labeled equipment shall be installed, used, or both, in accordance with ___.
(a) job specifications
(b) the plans
(c) the instructions given by the authority having jurisdiction
(d) the instruction included in the listing or labeling

37. A 240 volts single-phase room air conditioner shall be considered as a single motor unit if its rating is not more than ___ amps.
(a) 20 (b) 30 (c) 40 (d) 50

38. Metallic enclosures of reactor and adjacent metal parts shall be installed so that the ___ from induced circulating currents will not be hazardous to personnel or constitute a fire hazard.
(a) heat (b) arc (c) temperature rise (d) fumes

39. Service conductors run above the top level of a window shall be permitted to be less than the ___.
(a) 3' (b) 6' (c) 8' (d) 10'

40. Buildings of multiple occupancy shall be permitted to have ___ separate sets of service entrance conductors which are tapped from one service drop.
(a) one (b) two (c) two or more (d) no

RME TRIVIA #10

1. Any motor application shall be as ____ unless the nature of the apparatus it drives is such that the motor will not operate continuouconsidered sly with load any condition of use.
(a.) short-time duty (b.) varying duty (c.) continuous duty (d.) periodic duty

2. Distances from signs, radio and TV antennas, tanks or other nonbuilding or nonbridge structures, clearances, vertical, diagonal and horizontal, shall not be less than _____ feet.
(a.) 2 (c.) 6
(b.) 3 (d.) 8

3. Separation of junction box from motor shall be permitted to be separated from the motor not more than _____.
(a.) 6 feet (b.) 4 feet (c.) 1.83 (d.) none of

4. Plug fuses must have what specific shape?
(a.) octagonal (c.) hexagonal
(b.) square (d.) round

5. The lead wires of heating cables are color coded for ____identification.
(a.) lead (b.) voltage (c.) wire (d.) cable

6. An office is to be wired with the number of receptacles unknown, the demand for the receptacles is _____va per square foot.
(a.) 1 (c.) 3.5
(b.) 3 (d.) 180

7. For hallways of ____feet or more in length at least one receptacle outlet shall be required.
(a.) 6 (c.) 10
(b.) 8 (d.) 12

8. A cord connector that is supported by permanently installed cord pendant shall be considered _____.
(a.) receptacle outlet (b.) permanent cord
(c.) lighting outlet (d.) outlet device

9. Potential transformers, and other switchboard devices with potential coils shall be supplied bya circuit that is protected by standard overcurrent devices rated____amperes or less.
(a.) 15 (c.) 25
(b.) 20 (d.) 30

10. A ____shall be used to connect the equipment grounding conductors, the service equipment enclosures, and where the system is grounded, the grounded service conductor to the grounding electrode.
(a.) bus bar ( c.) 5/8" ground rod
(b.) neutral conductor (d.) grounding electrode cond.

11. A grounding electrode connection that is encased in concrete or directly buried shall _____.
(a.) be made accessible
(b.) be made only by exothermic welding
(c.) be a minimum #4 bare
(d.) not be required to be accessible

12. Where flexible cords are permitted by the code to be permanently connected, it is permissible to omit _____for such cords.
(a.) switches (b.) receptacles
(c.) grounding connections (d.) GFCI protection

13. Overhead spans of open conductors and open multiconductor cables not over 600 volts shall have a vertical clearance of not less than _____ above the roof surface.

(a.) 8 (c.) 4
(b.) 6 (d.) 3

14. Service overhead conductors to a building or other structure (such as a pole) on which a meter of disconnecting means is installed shall be considered as a _____and installed accordingly.

(a.) temporary service (c.) service drop
(b.) service lateral (d.) service point

15. If a switch or circuit breaker serves as the disconnecting means for a permanently connected motor driven appliance of more than _____horsepower, it shall be located within sight from the motor controller.

(a.)1/ 8 (b.) $\frac{1}{4}$ (c.) $\frac{1}{2}$ (d.) $\frac{3}{4}$

16. For installation consisting of not more than two 2-wire branch circuits, the service dsiconnencting means shall have a rating of not less than ____ amps.

(a) 20 (b) 30 (c) 60 (d) 100

17. Where single phase loads are connected on the load side of a phase converter, they shall not be connected to the ____.

(a) High leg (b) grounded phase (c) manufactured phase (d) neutral

18. A dry type transformer not rated over 112.5KV installed indoors, shall have a separation of at least ___ inches from the combustible material.

(a) 24 (b) 18 (c) 12 (d) 6

19. The highest current at rated voltage that a device is intended to interrupt under standard test condition is known as _____

(a) Overload (c) Inverse time rated
(b) Thermal protection (d)Interrupting rating

20. Which of the following does not require a switched outlet according to PEC?

(a) Walk through garage door
(b) Attic entrance
(c) Walk through porch door
(d) Drive through garage door

21. To reach a lighting fixture junction box you had to stand on a ladder. This junction box is considered to be _____.

(a) concealed (b) readily accessible (c) accessible (d) hidden

22. to settle disagreement between an inspector and a contactor foreman, the ____ would have the final say.

(a) local authority having jurisdiction (c) the IBEW
(b) local electrical board (d) the engineer

23. A lighting fixture under a canopy is considered to be in a _____ location.

(a) Damp (c) Dry
(b) Wet (d) Hazardous

24. Type UF cable shall be used for which of the following applications:

a. Concrete encased b. Direct buried
c. Service entrance cable d. None of the above

25. The maximum percent of overcurrent protection allowed ____ of the input current to an autotransformer where less than 9 amps.

(a) 167% (b)150% (c)300% (d)125%

RME TRIVIA #11

1. Which of the following may not be used in damp or wet locations?
a. AC armored cable b. EMT c. open wiring d. rigid steel conduit

2. Splices and taps shall not be located within fixture ___.
(a) splice boxes (b) arms and stems (c) pancake boxes (d) none of these

3. Receptacles mounted on _____ need not be grounded.
a. outdoor circuits b. garage walls c. portable generators d. electric ranges

4. Raceways on the outside of buildings shall be _____.
a. watertight and arranged to drain b. weatherproof and covered
c. raintight and arranged to drain d. rainproof and guarded