

Electrical Review - Quiz Questions

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Question 7:

Atoms that have received an extra electron are known as _____.

- Depleted atoms Charged atoms
Overcharged atoms Full atoms

Question 8:

If a positive and negative body are joined together by a copper wire, the following would happen.

- An atomic explosion
Nothing
Electrons would move in the wire from the negative charged body to positive charged body
Electrons would move in a wire from the lower charged body to the higher charged body

Question 9:

As the number of electrons in the outer orbit increases, the atoms change in behavior from a _____ to a _____.

- Conductor / insulator
Insulator/ conductor
No change either case

Question 10.

Which of the following is NOT an insulator.

- Electrical tape Copper wire
Plastic Dry wood
Dry leather

Question 11.

Corrosion on terminal is not desired because it _____

- Acts as an insulator and creates heat at the terminal.
Discolors the wire's insulation
Makes a system look old
Allows too much electricity to flow.

Question 12.

Like charges _____.

- repel attract have no effect
on each other none of the above

Question 13:

Which ways can electricity be produced.

- Chemical - batteries
Thermal
Photo-electric
Magnetically – mechanically generated
All of the above

Question 14.

A dry cell has the following part(s).

- 1 single metal
2 metals
2 metals and a paste
none of the above

Question 15

- The ANODE in a battery is
Positively charged
Negatively charged
Neutrally charged

Question 16

- The CATHODE in a battery is
Positively charged
Negatively charged
Neutrally charged

Question 17.

- A typical material used in a Cathode would be
Carbon black and manganese dioxide
Charcoal and dioxins paste
Rubber and silicon paste

Question 18.

An alkaline battery would use _____ as a base.

- Alkaline. Sulfuric acid
Formic acid Potassium hydroxide

Question 19.

The metal _____ is normally used for an anode.

- Iron Steel Silver
zinc

Question 20

Dry cells can be recharged.
True False

Question 21.

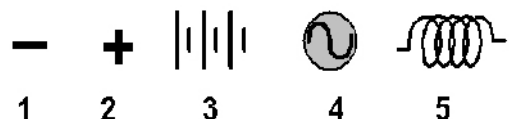
A wet cell uses _____ instead of a paste between the 2 plates.

- Solid Liquid Gas
Electromagnetic sponge material

Question 22.

- The electrolyte in a wet cell is typically
Water Formic acid Sulfuric acid
Potassium hydroxide

Quiz 1 - Questions 23,24,25 Graphics



Question 23

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Which of the above symbols represents negative electrons or a cathode

1 2 3 4 5

Question 24.

Which of the above symbols represents a positive proton or Anode.

1 2 3 4 5

Question 25.

Which of the above symbols represents a battery or direct current.

1 2 3 4 5

Question 26.

Magnets are surrounded with lines of force that are called flux.

True False

Question 27:

Two positive magnetic poles attract each other.

True False

Question 28:

The Right Hand rule for electricity states that you put your right hand on the wire with your thumb in the direction of flow, your fingers show the direction of the magnetic flux.

True False

Question 29.

As the current increases in a wire,
The strength of the magnetic field increases
The strength of the magnetic field decreases
The strength of the magnetic field does not change

The strength of the magnetic field is not influenced by current flow.

Question 30.

If an iron bar is wrapped with a wire and electricity is flowing through the wire, the iron bar acts like a magnet.

True False

Question 31:

Reversing the direction of electrical flow in an electromagnet DOES NOT reverse the N S poles of the electromagnet.

True False

Question 32.

A coil of wires wrapped around a metal plunger is called a

Haploid Diploid Semiotic

Solenoid

Question 33.

When a coil of wires wrapped around a metal plunger is energized, the coil of wires acts like a

Magnet Resistance heater
RF coil None of the above

Question 34.

When a wire is moved through a magnetic field, electricity flows in the wire.

True False

Question 35:

The flow of AC electricity changes direction during a cycle.

True False

Question 36.

In generating electricity, an armature coil is needed. The armature coil is

A rotating loop of wire
A stationary loop of wire
A rotating magnet
A stationary magnet

Question 37

The maximum voltage generated is found at _____ degrees in the position of the armature vs. the magnetic poles.

Zero 45 66
90 180

Question 38:

Voltage measured in a home is about 70% of the peak voltage that is generated.

True False

Quiz 2 (Pages 46 – 97)

Question 1:

Which of the following is not a basic part of an electric circuit?

Fuse Source of Power Load
Switch Conductors

Question 2

Electricity can be understood by comparing electricity with an hydraulic system. Amps are similar to:

pressure in psig. flow in gpm.
pressure loss. a control valve.

Question 3

Electricity can be understood by comparing electricity with an hydraulic system. Ohms in the system are similar to:

pressure in psig. flow in gpm.
pressure loss. a control valve.

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Question 21:

Using the wire-sizing table shown on page 63 of the internet course, what size wire should be selected for 50 amps if no de-rating factors are applied?

6 8 10
12

Question 22:

Using the wire-sizing table shown on page 63 of the internet course e, what size wire should be selected for 45 amps if no de-rating factors are applied?

6 8 10
12

Question 23:

Using the wire-sizing table shown on page 63 of the internet course, what size wire should be selected for 28 amps if no de-rating factors are applied?

6 8 10
12

Question 24:

As more wires are bundled together, the heat generated by the wires cannot be dissipated. The wires can carry _____ than the original design ampere load.

More Less The same

Question 25:

Using Table 310.15.B at the end this study guide or the table on page 77 of the course, what is the adjustment factor _____ % for 5 current carrying wires in a bundle?

100 80 70 50 40

Question 26:

Using Table 310.15.B at the end this study guide or the table on page 77 of the course, what is the adjustment factors _____ % for 15 current carrying wires in a bundle?

100 80 70 50 40

Question 27:

Using Table 310.15.B at the end this study guide or the table on page 77 of the course, what is the adjustment factors _____ % for 3 current carrying wires in a bundle?

100 80 70 50 45 40

Question 28:

By definition, a continuous load is _____ or more hours of continuous operation.

1 2 3 6 24

Question 29:

In sizing conductor wires, a load must be multiplied by _____ % if it is found to be a continuous load.

100 125 150 175 200

Question 30:

Wire is in an ambient location of 85 deg F. What is the temperature adjustment factor? (See Table 310.16.DE-RATEING for Ambient Temps found at the end of this guide, 140 F column)

1.08, 1.00 0.91 0.82 0.71

Question 31:

Wire is in an ambient location of 110 deg F. What is the temperature adjustment factor. (See Table 310.16.DE-RATEING for Ambient Temps found at the end of this guide, 140 F column)

1.08, 1.00 0.91 0.82 0.71

Question 32:

Wire is in an ambient location of 125 deg F. What is the temperature adjustment factor? (See Table 310.16.DE-RATEING for Ambient Temps found at the end of this guide, 140 F column)

0.91 0.82 0.71 0.58 0.41

Question 33:

What is the minimum sized wire for 20-amp load for the following conditions.

Continuous load, 5 wires in the bundle, 110deg F.

(Refer to Table 310.15.B and 310.16 at the end of the study guide)

6 ga 8 ga 10 ga 12 ga 14 ga

Question 34

What is the minimum sized wire for 30 amp load for the following conditions.

NON- Continuous load, 7 wires in the bundle, 120deg F.

(Refer to Table 310.15.B and 310.16 at the end of the study guide)

1/0 3 ga. 4 ga 6 ga 8 ga

Question 35

What is the minimum sized wire for 40 amp load for the following conditions.

Continuous load, 3 wires in the bundle, 125deg F.

(Refer to Table 310.15.B and 310.16 at the end of the study guide)

1/0 3 ga 4 ga 6 ga 8 ga

Question 36

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A standard plug fuse will fit in an S type fuse holder.

True False

Question 37:

A standard plug fuse can be reset.

True False

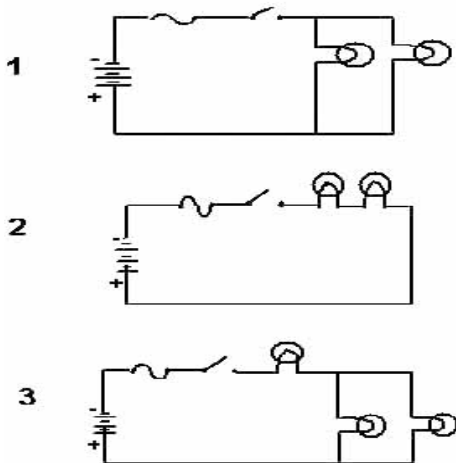
Question 38: Circuit breakers are interchangeable between manufacturers.

True False

Question 39: The common rating of a circuit breaker is in _____.

volts ohms arch corona
rating amps dielectric strength

Quiz 3 (pages 98 – 210)



Question 1:

A series/parallel circuit is represented by illustration _____.

1 2 3

Question 2:

A parallel circuit is represented by illustration _____.

1 2 3

Question 3:

A series circuit is represented by illustration _____.

1 2 3

Question 4:

A transformer can produce _____.

AC voltage DC voltage both
AC and DC

Question 5:

A transformer can _____.

step up voltage. step-down voltage.
both step up and step-down
voltage.

Question 6:

Voltage is transferred from one side of the transformer to the other side by a process called _____.

introduction transmutation attraction
theokanises induction

Question 7:

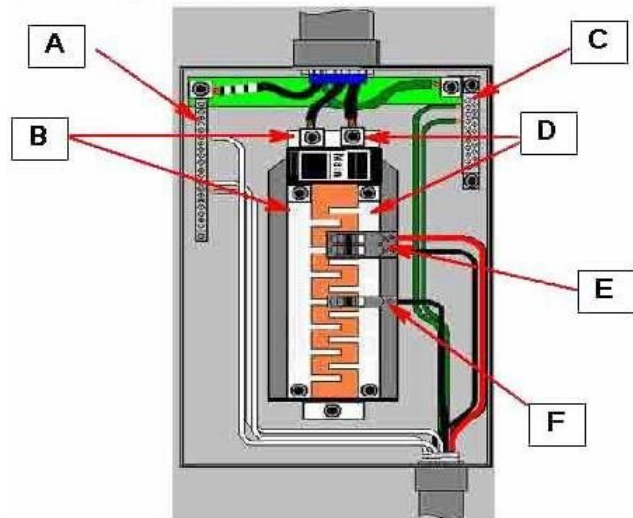
The major proven problem with the transmission of voltages over long distances is:

Transmission lines overheating.
Resistance in the wire and resulting voltage drops.

Obtaining right of way for access.

Magnetic flux lines causing cancer.

Vulnerability to terrorist attacks.



Question 8:

The ground buss bar is labeled _____.

A B C D E

Question 9:

L1 buss bar is labeled _____.

A B C D E

Question 10:

The 120 v breaker is labeled _____.

A C D E F

Question 11:

The L2 buss bar is labeled _____.

A B C D E

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Question 12: The neutral bus bar is labeled

A B C D E

Question 13:

Water heaters with a rated circuit load in excess of 3,500 watts at 208 volts must be have wire no smaller than:

6 AWG 8 AWG 10 AWG
12 AWG 14 AWG

Question 14:

When testing continuity (resistance) your meter should be set to:
ohms volts watts amps none of the above

Question 15:

On a resistance test, when the probes of your meter are touching each other, you should read _____, and when the probes are separate by an air space, you should read

O.L, 0 or close to it 14 ohms, O.L. 0 ,
over 250 0 or close to it, O.L.
less than 100, more than 1000

Question 16:

If work is required on electrical equipment that has a fused disconnect box, what is the first thing that should be done?

Protect yourself and put the key to the lockout in your pocket.

Turn the disconnect connecting arm or lever to the off position.

Check with a voltage pen to verify that power is off.

Secure power to the electrical circuit by locking out the breaker or disconnect box.

Remove the fuses from the disconnect box.

Question 17:

If work is required on electrical equipment that has a fused disconnect box, what is the second thing that should be done?

Protect yourself and put the key to the lockout in your pocket.

Turn the disconnect connecting arm or lever to the off position.

Check with a voltage pen to verify that power is off.

Secure power to the electrical circuit by locking out the breaker or disconnect box.

Remove the fuses from the disconnect box.

Question 18:

If work is required on electrical equipment that has a fused disconnect box, what is the third thing that should be done?

Protect yourself and put the key to the lockout in your pocket.

Turn the disconnect connecting arm or lever to the off position.

Check with a voltage pen to verify that power is off.

Secure power to the electrical circuit by locking out the breaker or disconnect box.

Remove the fuses from the disconnect box.

Question 19:

If work is required on electrical equipment that has a fused disconnect box, what is the fourth thing that should be done?

Protect yourself and put the key to the lockout in your pocket.

Turn the disconnect connecting arm or lever to the off position.

Check with a voltage pen to verify that power is off.

Secure power to the electrical circuit by locking out the breaker or disconnect box.

Remove the fuses from the disconnect box.

Question 20:

If work is required on electrical equipment that has a fused disconnect box, what is the last thing that should be done?

Protect yourself and put the key to the lockout in your pocket.

Turn the disconnect connecting arm or lever to the off position.

Check with a voltage pen to verify that power is off.

Secure power to the electrical circuit by locking out the breaker or disconnect box.

Remove the fuses from the disconnect box.

Question 21:

What is the first step in rescuing a person?

Use a non-conducting wooden broom handle to move the electrical wire from the victim.

Find breaker and disconnect and turn off power. If you cannot find the

breaker/disconnect, proceed with the next step.

If victim is unconscious, apply first aid and CPR. Call 911 for medical attention.

Cover the victim and keep warm until rescue paramedics get there.

Question 22:

What is the second step in rescuing a person?

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Use a non-conducting wooden broom handle to move the electrical wire from the victim. Find breaker and disconnect and turn off power. If you cannot find the breaker/disconnect, proceed with the next step.

If victim is unconscious, apply first aid and CPR. Call 911 for medical attention. Cover the victim and keep warm until rescue paramedics get there.

Question 23:

What is the third step in rescuing a person? Use a non-conducting wooden broom handle to move the electrical wire from the victim. Find breaker and disconnect and turn off power. If you cannot find the breaker/disconnect, proceed with the next step.

If victim is unconscious, apply first aid and CPR. Call 911 for medical attention. Cover the victim and keep warm until rescue paramedics get there.

Question 24:

What is the fourth step in rescuing a person? Use a non-conducting wooden broom handle to move the electrical wire from the victim. Find breaker and disconnect and turn off power. If you cannot find the breaker/disconnect, proceed with the next step.

If victim is unconscious, apply first aid and CPR. Call 911 for medical attention. Cover the victim and keep warm until rescue paramedics get there.

Table 310.16 Allowable Ampacities of Insulated Conductors Rated 0 Through 2000 Volts, 60°C through 90°C (140°F Through 194°F), Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried), Based on ambient Temperature of 30°C (86°F)

Size AWG or kcmil	Temperature Rating of Conductor (See Table 310.13)						Size AWG or kcmil
	60° C (140° F)	75° C (167° F)	90° C (194° F)	60° C (140° F)	75° C (167° F)	90° C (194° F)	
	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, USE, ZW	Types TBS, SA, SIS, FEP, FEPB, MI, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, ZW-2	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, USE	Types TBS, SA, SIS, THHN, THHW, THW-2, THWN-2, RHH, RHW-2, USE-2, XHH, XHHW, XHHW-2, ZW-2	
COPPER			ALUMINUM OR COPPER-CLAD AL				
18			14				
16			18				
14	20	20	25				
12	25	25	30	20	20	25	12
10	30	35	40	25	30	35	10
8	40	50	55	30	40	45	8
6	55	65	75	40	50	60	6
4	70	85	95	55	65	75	4
3	85	100	110	65	75	85	3
2	95	115	130	75	90	100	2
1	110	130	150	85	100	115	1
1/0	125	150	170	100	120	135	1/0
2/0	145	175	195	115	135	150	2/0
3/0	165	200	225	130	155	175	3/0
4/0	195	230	260	150	180	205	4/0

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Number of Current-Carrying Conductors	Percent of Values in Tables 310.16
4-6	80
7-9	70
10-20	50
21-30	45
31-40	40
41 and above	35

AMBIENT TEMPERATURE	60° C (140° F)	75° C (167° F)	90° C (194° F)
	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, USE, ZW	Types TBS, SA, SIS, FEP, FEPA, M, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, ZW-2
	COPPER		
70 - 77	1.08	1.05	1.04
78 - 86	1.00	1.00	1.00
87 - 95	0.91	0.94	0.96
96 - 104	0.82	0.88	0.91
105 - 113	0.71	0.82	0.87
114 - 122	0.58	0.75	0.82
123 - 131	0.41	0.67	0.76
132 - 140	-	0.58	0.71
141 - 158	-	0.33	0.58
159 - 176	-	-	0.41