JANUARY 2024

FEEDBACK

WOERH.ORG

A PUBLICATION OF THE JOHNSON COUNTY RADIO AMATEURS CLUB, INC.

President's Corner

Welcome to 2024 and I hope everyone had a safe, enjoyable holiday. Now we will get started working on the events for the new year.

But first, please thank Tim (KBØYQN) for the Christmas lights tour and the resulting donation to the club.

the first meeting in January, by tradition, is a planning meeting for the year. Please bring your ideas to the meeting. We also want to discuss the club's web page. The members only section will be one of the topics. The current configuration of this page causes problems.

We have gathered many topics in the past for club programs. What is lacking on this list is a presenter. If we find a match between topic and presenter, we can schedule that topic. Please help us with this task.

Happy New Year!

Bill
KA2FNK

In This Issue

Upcoming Club Events

- Fri. Jan 12 @ 1900 - Club Meeting - Biz Meeting and Presentation - Topic: Program Planning for 2024 by Attending Members
- Fri. Jan 26 @ 1900 - Club Meeting - Extended presentation with Q&A - Topic: TBD at January 12th meeting
- Tue. Feb 6 @ 1830 - Club VE Testing - JoCo Library 9875 W 87th St, OPKS
- Fri. Feb 9 @ 1900 - Club Meeting - Biz Meeting and Presentation - Topic: TBD

Hambone

"Hambone and the Tough Test"

A Hambone story by Jaimie Charlton ADØAB

"As the bartender said to the horse that walked in, 'Why the long face?" said Hambone to Dude, his younger brother, desultorily playing his PlayStation 4.

"I thought you'd be happy school's out until Spring and you made it through your first year. Instead, you're sitting here in the frat house staring at that stupid game. What's up?"

"Dad and Uncle Elmer are going to kill me when they see my grades," replied Dude.

Hambone cont'd

"They can't be all that bad," consoled Hambone. "What'd you get?"

"I got all As and Bs with one C in Diversity Training except..."

"Except what?"

"Except *DC and AC Principles*, I was luck to get a D in that class."

"Isn't that the one where you got to retake the final exam because you got sick during the first test and had to leave before finishing?"

"Yeah, that's the one," moaned Dude.

"So, let me get this straight," said Hambone experiencing a touch a schadenfreude at his brother's plight. "You nearly flunked an entry-level class in your major even though you got to take the final exam twice?"

"Yeah."

"You're right. Both Dad and Uncle Elmer are going to kill you," said a grinning Hambone.

"What happened? Didn't you study?"

"Ah, not exactly. I thought I knew all that beginner stuff. After all, I have a General Class ham license. And that final was supposed to be easy, but it was a lot harder than it looked."

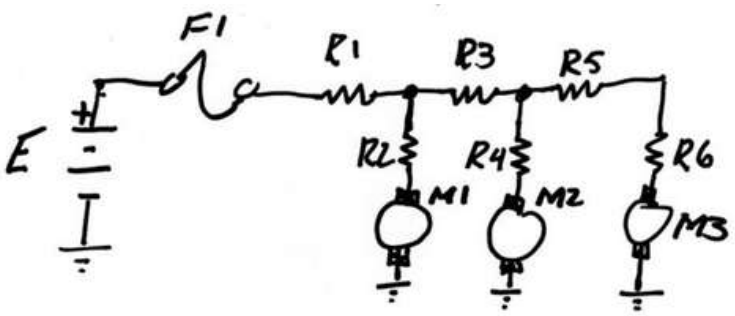
"I doubt that," declared Hambone.

"Well, Bro," said Dude perking up, "Let's see if you can solve these. I memorized a few or the questions so I could ask Unck how to solve them, but you'll do."

"Bring them on!"

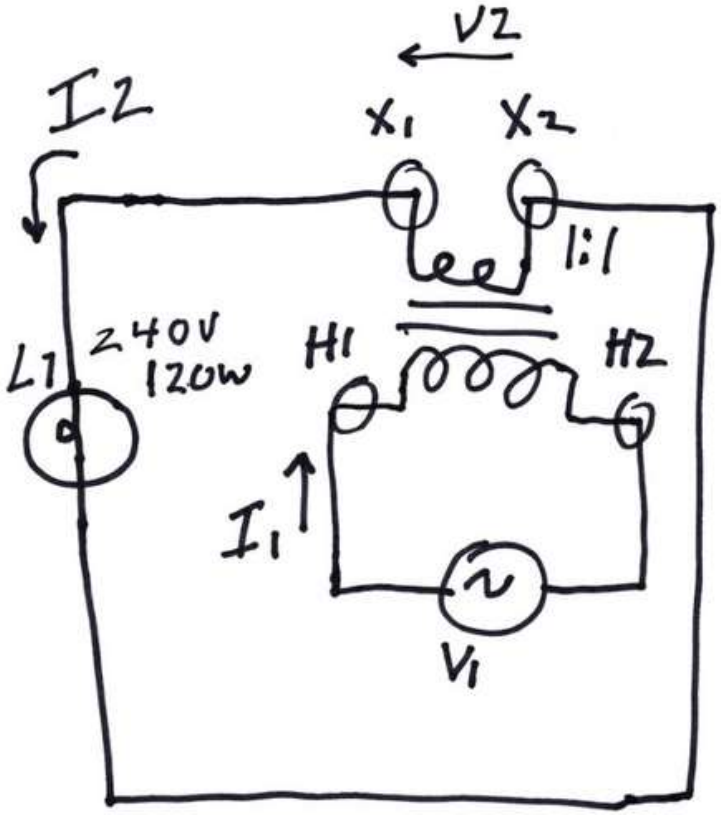
"These are the ones I couldn't figure out:"

1. In the following circuit, all three motors are running too fast. What might be the problem and why?



2. In the drawing below, the 240 volt 120 watt incandescent lamp L1 is burning at normal brightness. Find:

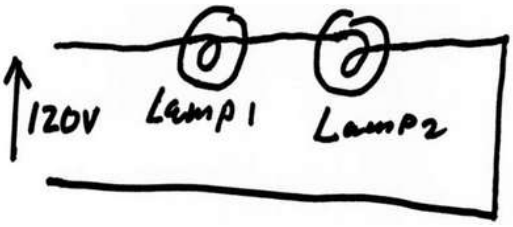
Source voltage V1: _____
A Load voltage V2: _____
B Source current I1: _____
C Load current I2: _____
D Transformer secondary VA: _____
E Transformer primary VA: _____



Hambone cont'd

3. In the following drawing, Lamp 1 is rated 250 watts, 120 volts and Lamp 2 is rated 120 watts, 250 volts. Which lamp is burning the brightest?

a) Lamp 1
b) Lamp 2
c) Both burn with the same brightness
d) Neither light because they are in series



4. In the following drawing, Lamp 1 is rated 25 watts, 120 volts and lamp 2 is rated 250 watts, 120 volts. Which lamp is burning the brightest?

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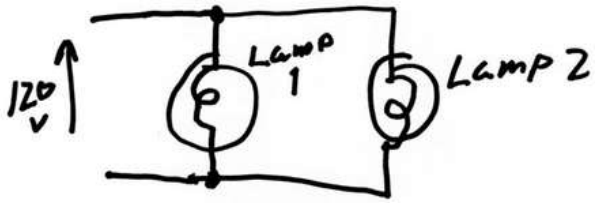

5. In the following circuit, lamp L1 is rated 25 watts, lamp L2 is rated 60 watts and lamp L3 is rated 100 watts. All lamps are rated at 120 volts. Which lamp burns the brightest?

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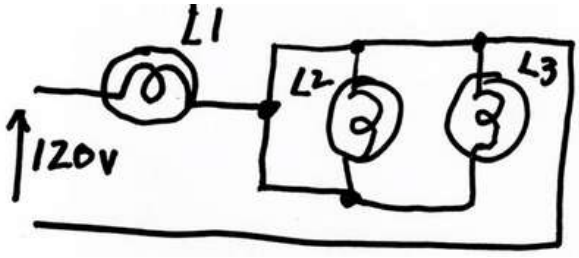
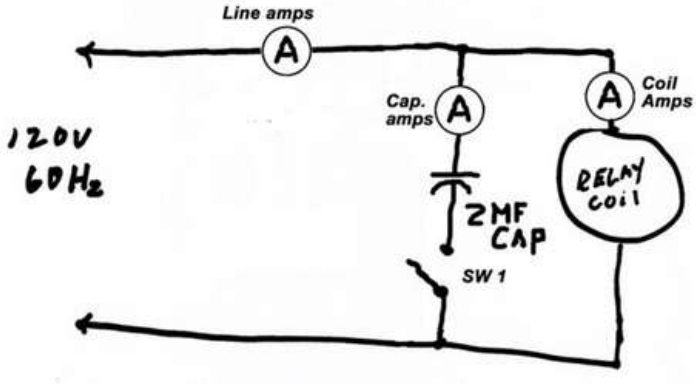
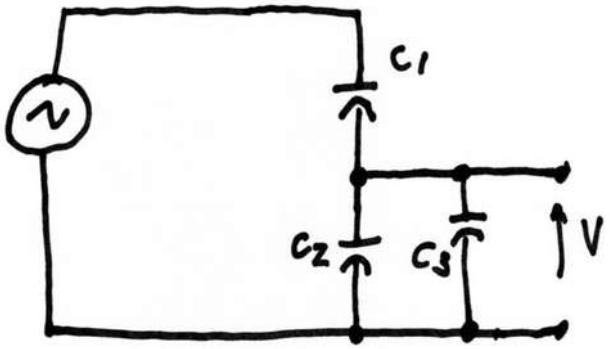


6. In the following drawing, which ammeter read the lowest current?

a) Line Amps
b) Cap. Amps
c) Coil Amps
d) They all read the same



7. In the following drawing, C1 = 20 mfd, C2 and C3 = 10 mfd each, V = 100 volts 60 Hz.



7a. How much voltage is the AC power supply supplying? _____

7b. How many watts is the AC power supply supplying? _____

"Oh, yeah, I sort of remember these," said Hambone. "They seemed hard when I took that course. Remember how the prof always said to read and understand the problem before grabbing your calculator and madly punching numbers? That's really true in these. I bet you didn't do that, did you?"

"Maybe not all the time," Dude confessed. "I wanted to finish as soon as possible. I didn't want to be the last guy out of the class."

Hambone cont'd

"Now you know better," pontificated Hambone. "Let's look at problem number 1."

"I don't get it. There's no values on the resistors or voltages or anything," said Dude.

"You're right," agreed Hambone after studying the problem. "Let's try number 2 then."

"Same thing. No numbers," sighed Dude.

"Not quite. The lamp has numbers."

"Yeah, but the nameplate values have nothing to do with the circuit."

The boys were so engrossed in probing the depths of mysterious transformer technology that they didn't notice someone entering the room. That is until a new, yet familiar, voice said, "Hi, guys. What's up?"

To say they were startled would not begin to describe their reactions. Dude jumped up knocking his chair over. Hambone let out a squeak (that he later denied) and nearly fell backward.

"Joey!" They shouted in unison. "What a surprise to see you! Are you finally coming home?"

Before the boyds stood a new, and at least appearance-wise, Joey. The dirty shirt and ratty man-bun had been replaced by a clean and buff college guy. The tattoos and red beard were still there, but now they looked good.

"Yeah, guys, I have finally come home and I hope for good."

"What happened to you? Where'd you go?" chorused Hambone and Dude.

"Whoa, guys, slow down! I'll tell you everything but first, I'd like you to meet my best girl, Foxy."

"Hi, Foxy. I'm Dude. This is my brother, Hambone."

Hambone wanted to say 'hi' but no sound came out. Oh sure, his lips moved. Sort of like a trout our of water, but no sound. That was because he was stunned by Foxy's long dark hair and the roguish look in her hypnotic blue eyes.

Finally, Dude poked him out of his trance and he managed, "Hi, Hambone. I'm Foxy."

Hambone pinked up as Dude and the other frat boys who gathered to greet Joey burst out laughing. Foxy smiled.

But the levity died down, the frat house cooler provided refreshments, Hambone regained his normal geek pallor and everyone wanted to know what happened to Joey.

"I'd rather not say why, but I ended up in juvenile court over some really bogus charges," Joey explained. "The judge didn't like my tats and wanted to make an example of me by giving a really harsh sentence. He said I could either do two years in juvie or join the army. I had until the next day to decide.

"Luckily, my mom, dad and cousin, Byron, whom I barely knew, were in the courtroom when the judge handed down my sentence. I was shocked. I expected probation like my several other visits to that place. My mom started to cry. My dad and cousin Byron looked really grim. My public defender, whose name I don't remember, apologized.

Hambone cont'd

"The judge stood to leave the room, two fat cops cuffed me and were dragging me back to jail when my cousin spoke to my lawyer. The lawyer asked to speak to the judge along with the prosecuting attorney.

"The three conferred for what seemed like hours but was probably no more than five minutes. Then the rotund cops took me away. When I returned to the courtroom the cuffs were off and my left leg had a brand new stylish black ankle bracelet. Papers were signed, pledges were sworn and I was released in my cousin's custody. Thank God for Cousin Byron."

"So, you beat the rap?" asked Dude.

"Not exactly. Professionally, Cousin Bryon is a dentist, but he also operates a farm with his girlfriend, Nan, in west central Kansas. He showed the judge a photo. It's your American storybook farm with a big red barn and everything. That convinced the judge to release me in his custody as a full-time farm hand."

"That sounds like fun," said Hambone.

"At first it was, then it wasn't. You'd be surprised how much poop even a few cows make in a single day. And it has to be shoveled out by something. That someone was me.

"Farm work is hard. There was always something that needed lifting, pushing or carrying and those jobs fell to me. If I balked, good ole Farmer Byron would offer to take me to the county courthouse where I could get a free ride back to juvie."

"I think they call that indentured servitude," said Tim who had joined the group.

"They do, but it had a good side, too. Byron paid me and let me work on some of the fancy machinery. It's amazing! Some of it even has GPS controls. When he saw that I could fix any mechanical or electrical problem, he offered to send me to the local community college to study electrical engineering. The judge agreed, the bracelet was removed and off I went. 'Twas a little more than two years ago.

"I graduated from that school and now I'm here to finish my EE degree."

"And I am, too," said Foxy who had remained quiet all this time.

"Yes, Foxy and I met at school. She's also working on a double E degree. She already has an ME, er, Mechanical Engineering degree."

"I was happy with being a Mechanical Engineer, but when Joey let me help him work on the electronics of the farm machinery, I was hooked on electronics. So, here we both are," added Foxy. Hambone thought he saw her wink at him. Or... maybe not.

"That sounds great," said Dude. "We can help you with your homework and stuff."

"Greater than you might think!" exclaimed Joey. "We both are in some of Hambone's classes!"

"Awesome," said Hambone trying to appear happy and at the time time plotting to get rid of Joey but keep Foxy.

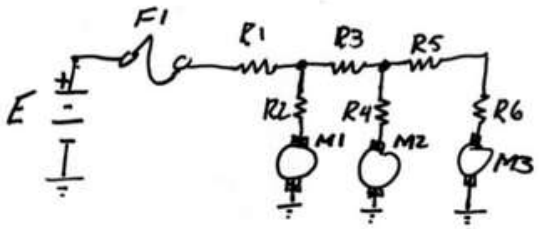
"Hey, you guys were working on some problems when we came in. Let's have a look at them. I bet as a group we can solve them."

"Sure," moaned Hambone. "Here's number 1."

"I still don't know how to solve this," said Dude. "There's still no numbers."

Hambone cont'd

1. In the following circuit, all three motors are running too fast. What might be the problem and why?



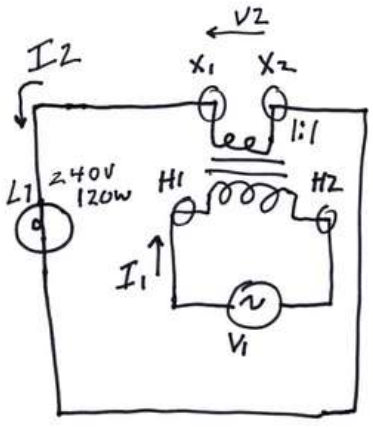
"That's because you don't need them," observed Foxy. "You're told that all the motors are running too fast. The only components that affect all three are the power source, E, the fuse, F1, and R1. The fuse is not blown because the motors are running. That leaves only E and R1. The motors will run faster if either E has increased or R1 has decreased. See, no need to calculate anything."

What Dude saw is that Foxy is going to be helping him with homework, not the other way around like he originally thought.

"Yeah, I see it now," moaned Dude. "But number 2 is much harder. There's no useful information."

2. In the drawing below, the 240 volt 120 watt incandescent lamp L1 is burning at normal brightness. Find:

Source voltage V1: _____
A Load voltage V2: _____
B Source current I1: _____
C Load current I2: _____
D Transformer secondary VA: _____
E Transformer primary VA: _____



"Not really," said Hambone. "A critical bit of information is that the lamp is burning at normal brightness. That means it's receiving its rated voltage of 240 volts. That means the transformer's secondary voltage, V2, equals 240 volts. But there is more. That drawing shows the transformer's turns ratio is 1:1."

"The 1:1 turns ratio means that the same voltage appears across both windings. Since we've already determined that the secondary voltage is 240, the primary voltage, or source voltage V1, must also be 240 volts.

"Next you use the power formula, P = IE, or watts equals volts times amps, to find the load or lamp current."

"Okay, I see how to find the current," said Dude grabbing his calculator.

"Stop! That's exactly what the prof said not to do. First, solve the formula for current, I = P/E. Then, when we plug in the numbers, we see I - 120 watts / 240 volts. So what's the current?"

"Half an amp!" shouted Dude.

"Yeah, and you didn't need a calculator.

"Moving on. Because the transformer's turn ratio is 1:1, the source current is also half an amp. And finally, since the secondary current is 0.5 amps and secondary voltage is 240 volts, the secondary VA = 0.5 x 240 = 120VA."

"Okay, I think I see how this works. Because the transformer, VA in equals VA out, the primary VA is also 120VA."

"Yes, so you didn't need much of anything except logic to understand and solve the problem. The important work is *understand,*" said Hambone professorially, trying to impress Foxy.

"Nice job, Hammy," said Joey. "You are still 'da man'."

Hambone cont'd

"Let's look at problem 3. In problem 3," said Dude.

"Let me do this one," begged Foxy who was really getting into this problem-solving thing.

3. In the following drawing, Lamp 1 is rated 250 watts, 120 volts and Lamp 2 is rated 120 watts, 250 volts. Which lamp is burning the brightest?

a) Lamp 1
b) Lamp 2
c) Both burn with the same brightness
d) Neither light because they are in series

"The lamp dissipating the most power is burning the brightest. Because the lamps are in series, they have the same current. The power each lamp is dissipating is P=I^2*R. That tells you that the higher the resistance, R, the greater the power because the current, I, is the same in both lamps. You could calculate the resistance of each lamp to see which is higher, but it's obvious that the lower the lamp's wattage, the higher its resistance. So, the 120 watt lamp burns the brightest."

"That's the right answer," said Dude. "So, by that logic, the answer to number 4 is the 25 watts lamp burns the brightest."

4. In the following drawing, Lamp 1 is rated 25 watts, 120 volts and lamp 2 is rated 250 watts, 120 volts. Which lamp is burning the brightest?

a) Lamp 1
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c) Both burn with the same brightness
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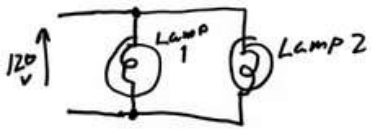
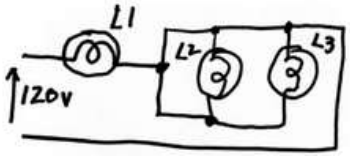


"Wrong!" shouts Hambone trying to regain the upper hand in this problem-solving match. "Those lamps are connected in parallel across the voltage source, so each gets its rated voltage. The 250 watt lamps will burn much brighter."

"Oh," said a crest-fallen Dude. "I thought I was on a roll. But the next problem is harder."

5. In the following circuit, lamp L1 is rated 25 watts, lamp L2 is rated 60 watts and lamp L3 is rated 100 watts. All lamps are rated at 120 volts. Which lamp burns the brightest?

a) Lamp L1
b) Lamp L2
c) Lamp L3
d) They all burn with the same brightness



"Not really," said Joey, heating up this three-way match. "Lamp 1 is the brightest because the other lamps are shorted out and don't light at all."

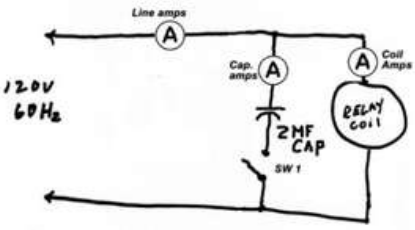
"Oh my gosh! You're right! I didn't see that at all."

Joey continued, "Again, as Hammy said, look the problem over carefully before acting. Knee-jerk reactions are almost always wrong. This goes for any troubleshooting, not just school problems.

"For example, in problem 6, the ammeter reading capacitor current reads 0 amps which is lower than any of the others."

6. In the following drawing, which ammeter read the lowest current?

a) Line Amps
b) Cap. Amps
c) Coil Amps
d) They all read the same



"I don't see how you can say that without calculating the currents."

"Simple, Dude. The switch is open."

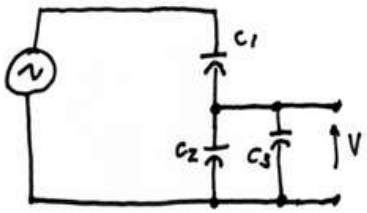
"Oh."

"Finally, in problem 7..."

Hambone cont'd

"This one's mine!" proclaimed Foxy.

7. In the following drawing, C1 = 20 mfd, C2 and C3 = 10 mfd each, V = 100 volts 60 Hz.



7a. How much voltage is the AC power supply supplying? _____

7b. How many watts is the AC power supply supplying? _____

"Here's where we need to calculate something," interrupted Dude.

"Actually, No. Notice that the two lower capacitors are in parallel so they combine to make the equivalent of a single 20 mfd capacitor. Since the reactances of the upper 20 mfd capacitor and the combo of the lower capacitor are the same, they form a voltage divider that cuts the supply voltage in half. Since the output voltage is 100 volts, the input voltage must be twice that, or 200 volts."

"Okay," agree Dude. "But what about the power? That's harder."

"No," said Hambone once again trying to impress. "The power supply is supplying 0 watts. That's because capacitors don't dissipate any power and there is nothing connected to the output."

"Yeah," said a defeated Dude. "I think I see how to do a better job next time around."

"That was fun," said Hambone. "Let's go to the student union and get some burgers. If Uncle Elmer's still there, he'll be glad to see Joey and probably pick up the bill."

Jaimie "Unck" Charlton
ADØAB
Author of Hambone

Intentional QRM

What is a New Year's resolution?
- *A to-do list for the first week of January.*

How does Jack Frost get to work?
- *By icicle.*

What's the easiest way to keep your New Year's resolutions to read more?
- *Turn on the subtitles on your TV.*

When do monsters go back to school after winter break?
- *In Janu-eerie.*

This is Only a Test

Are you new to the hobby? Maybe you recently received your Technician class ticket and what you have learned is still fresh. Or maybe you have held your Extra class ticket for a while and have forgotten some of what you have learned. Regardless, let's keep those mental pencils sharp by reviewing some of the questions from each of the question pools. Only a Tech? Push yourself and try the higher class questions. You might surprise yourself and be encouraged to try your hand at upgrading!

Amateur Extra pool questions change 1 July 2024.

1. T5C04D09 – What is the unit of inductance?
   A. The ohm
   B. The coulomb
   C. The farad
   D. The henry

2. T9B06 – Which of the following RF connector types is most suitable for frequencies above 400 MHz?
   A. DB-25
   B. Type N
   C. RS-213
   D. UHF (PL-259/SO-239)

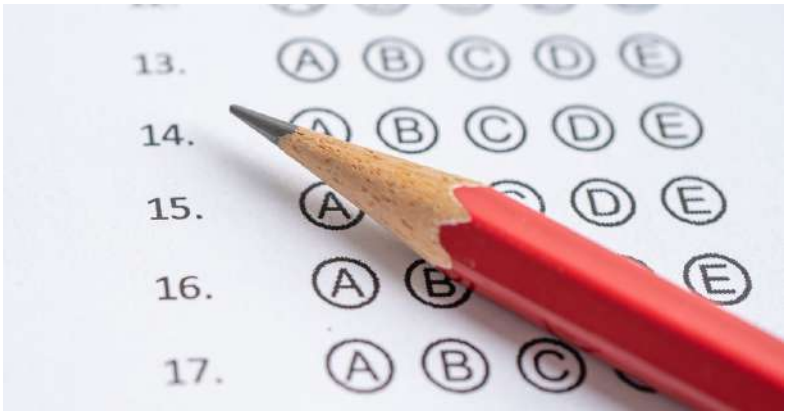
Test cont'd

3. G6A12 – What is the primary purpose of a screen grid in a vacuum tube?
   A. To reduce grid-to-plate capacitance
   B. To increase the control grid resistance
   C. To decrease plate resistance
   D. To increase efficiency

4. G3C13 – Which of the following components should be added to a capacitor to increase the capacitance?
   A. An inductor in parallel
   B. A capacitor in parallel
   C. A capacitor in series
   D. An inductor in series

5. E1E02 – Who does Part 97 task with maintaining the pools of questions for all U.S. amateur license examinations?
   A. The ARRL
   B. The VEs
   C. The FCC
   D. The VECs

6. E9A07 – What is the effective isotropic radiated power of a repeater station with 200 watts transmitter power output, 2 dB feed line loss, 2.8 dB duplexer loss, 1.2 dB circulator loss, and 7 dBi antenna gain?
   A. 159 watts
   B. 632 watts
   C. 63.2 watts
   D. 252 watts



Answers: 1d, 2b, 3a, 4b, 5d, 6d

How did you do?

If you got all the questions correct, *Congrats!* If you hold a Technician or General class license, this may be the sign you need to work on that upgrade. Plenty of resources are available for study. The JCRAC VE Team holds testing sessions on the first Tuesday of each month at the Johnson County Library at 87th & Farley in Overland Park. The VEs start arriving and setting up about 6:30 PM, but as long as you arrive by around 7:00 PM or shortly thereafter, you should be able to complete your test. The library does close at 8:00 PM.

Are you ready and don't feel like you can wait? Contact Kevin, ADØIM, and see if a pop-up VE session can be held. Only 3 VEs are needed and there a plenty of Club VEs, so it usually isn't too difficult to arrange. They understand that when you are ready, YOU ARE READY!

From the Editor

I hope that everyone had a great holiday season including a safe celebration for the new year. For me, December is always an extremely busy time of year in my work, and this past December was no exception. Sadly, I think I was only turned on a radio once throughout it. I'm experiencing a bit a withdrawal. With a slower month ahead, I should be able to relax a little bit and spin that dial.

It will also be good to get back in the swing of the bi-weekly meetings. I do miss seeing my fellow members. Conversing and sharing ideas and stories is always fun for me. I am really excited for the meeting on the 12th because that is where we can discuss some of the things we are all passionate about as we come up with meeting presentation ideas. I cannot wait to see what kind of list we can create and am excited to learn more about the topics that interest the other members. Bring your ideas to share. I will have mine!

Until then, 73!
Tim Wiegman, Jr.
KBØYQN

Announcements

The Wheatshocker Net Wants You!

Have you wondered what it takes to be Net Control? Do you want to be a Net Control for the club? If so, contact Dave Porter, KØDVP, expressing your interest in learning how to become Net Control for the Wheatshockers nets.

Dave and other veteran Net Controls will put together a training session to teach what it takes to become an effective Net Control, how to log check-ins, how to identify and handle "doubles," and other tips and techniques. Don't worry! Being Net Control is not a weekly commitment. And more Net Controls allows for more flexibility in when and how often you act at Net Control. Plus it provides experience when the need arises for a formal net.

Again, contact Dave KØDVP if you have interest in becoming at Net Control for the club.

February Classes

Know someone who is interested in becoming an amateur radio operator? Are they struggling to find appropriate material to study and pass their tests? Are they taking practice tests online and receiving undesirable results? Do they need the structure of a classroom setting to better grasp the information and better learn the material?

HamClass.org is hosting a Technician Class license class in January at Wyandotte County Emergency Management in KCK. For just $35 plus FCC fees, one can attend these classes held on February 17th and 24th. A VE testing session is held at the conclusion of the second class that Saturday afternoon. That means you could leave class the afternoon of February 24th having passed your licensing examination and be issued your license within just a few short days!

Signing up is easy! Just visit www.HamClass.org to enroll and you could be on your way to being a newly licensed amateur radio operator.

Johnson County ECS Training

Johnson County Emergency Communication Service (ECS) is the appointed RACES organization for Johnson County. Its primary mission in support of Johnson County Emergency Management is storm spotting.

In compliance with County requirements, ECS requires each member to be appropriately trained and certified. Training is conducted in the first quarter of each year to certify new member and re-certify exisiting members.

If you are interested in joining ECS or need to re-certify, please visit www.k0ecs.org for the training schedule and all steps necessary to become a member of ECS. You may also sent any questions about training and ECS requirements to training@k0ecs.org.

ECS is a vital communications resource for Johnson County providing real time support to county emergency agencies as well as the National Weather Service during times of severe weather.

Member Traffic

Feedback is a newsletter that is for you, the members of JCRAC. Submitting ideas, photos, tips and more to share with fellow club members helps us learn and grow as a club.

This month, John Raydo, KØIZ, has sent in a useful website chock full of resources, training topics and more related to ham radio. From the Ratzloff family, Noji, KNØJI, et alia have curated lots of info regarding ham radio and topics that are ham radio adjacent. You can visit their website at:

https://www.noji.com/hamradio/hamradio.php

When typing in that website, make sure you enter it as typed above. Do not capitalize any letters as that will not direct you to the proper site.

Next month, an article on a voice keyer written by John featured in the January 2024 *QST* will be included in *Feedback*. Thanks for your contributions, John!

What's Your Traffic?

Have something you'd like to announce to the club? What about a useful Tech Tip? Is there club member that should be spotlighted? Photos from a presentation?

Your input including ideas, photos, news bits, etc. will help me curate the monthly "Feedback" newsletters. Together, we can create an awesome publication to advance and further the Amateur Radio hobby.

Submit a contribution by emailing me at twiegman+feedback@gmail.com

Thank you to those that submit photos for events and meetings as well as provide tech tips and other information.

Club Nets

The club has weekly nets on Wednesday and Thursday. It is a great way to test your equipment. Many public service events conduct their communications in a similar way, so this is also a great way to gain experience applicable to assisting in public service events.

Wednesday @ 1900 - Yaesu Fusion net via Kansas City Room, also accessible from select local KC repeaters (visit www.kansascityroom.com for a list)

Wednesday @ Conclusion of Fusion net - 40M Roundtable *near* 7.273 MHz LSB

Thursday @ 1900 - Wheatshocker analog net on 145.29 MHz club analog repeater (negative offset, PL Tone of 151.4 Hz)

Thursday @ Conclusion of analog net - 10M Afterglow net *near* 28.475 MHz USB (within Technician Class portion of band)

Need Club Swag?

If want to show off your JCRAC pride and need some club swag, you may order some by visiting the "Store" tab on the club website where you can purchase hats, patches, name badges and shirts. Also, some items along with other goodies may be available for purchase at club meetings.

Club website: https://www.w0erh.org

FEEDBACK

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