2026 - 2030 TECHNICIAN CLASS
Pre-Study fun-quiz packet

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WELCOME TO HAM RADIO ! This fun Pre-Study quiz set checks your progress in ham classes, and parallels my ARRL Technician Class test preparation book.

Every quiz question, rewritten with my smile, includes the precise page number in my "yellow cover" book to verify the correct answer. You work these fun questions by topic areas in your classroom or web training sessions.

NOTE: The suggested page numbers (ie , p. 246) after each quiz question will lead you to my Q&A question explanation in my ARRL Gordon West Yellow Cover Technician Class book . I also list topics in this fun quiz, to locate explanations in other Technician Class publications from the League.

This quiz set is also great practice using any ARRL and other licensing manuals too.

Print these quizzes out and pen or pencil your answer. On your actual FCC examination for Technician Class, element 2, answers are

multiple choice, all the easier, EXACTLY in the books you are studying.

I come with my book, too! You can e-mail me at WB6NOA@ARRL.NET, and phone me direct at (714) 549-5000, 10am to 4pm, California time, during the week. If you have questions about what radio to get you on the air, we can talk about that, too.

Go to my ARRL web pages to HEAR the sounds of ham radio in action, to see where to get ARRL training materials, and visit the ARRL Learning Center, learn.arrl.org, for more ham radio study sessions.

Join me at: HTTPS://WWW.ARRL.ORG/GORDON-WEST

I am now your personal trainer, and hope to be your very first contact you make over ham radio when your license arrives.

So print these pages, grab my book to see the book page number to find the correct answer, and again, my warm best study success wishes to join me as an FCC licensed Amateur Radio Operator.

Gordon West
WB6NOA
54 years with ARRL
64 years on the air with ham radio!

GETTING INTO HAM RADIO *(pages 1~4)*

These won't be test questions, but file these "factos" in your grey matter to become a great ham radio operator. No, I have no clue where the word "ham" came from, so if YOU know, let ME know! So take out your trusty pen or pencil and write in on these lines what you think is the correct answer!

1. How many ham radio operators are there in the world? _____ p. 1

2. How many ham operators in the USA? _____ p. 1

3. Which organization will issue your USA amateur radio license? _____ p. 1

4. How many questions will be on your upcoming Technician Class exam? _____ p. 1

5. Popular choice for a new handheld radio has how many bands? _____ p. 2

6. Could you use a CB antenna on 10 meters? _____ p. 3

7. You can bounce a signal off this object in outer space! _____ p. 3

8. Ham radio live color TV is called? _____ p. 3

9. Ham radio is a hobby, but most important, ham radio is a _____ p. 4

10. A fellow ham to show you the ropes is called a what? _____ p. 4

11. We hope you will join this organization: _____ p. 4

(I also include their sign-up page in our book, page 233. Yes, you can join the ARRL before you receive your new call sign!)

TECHNICIAN CLASS PRIVILEGES *(pages 5~20)*

Nope, you don't need to memorize all this fun stuff here, but give it a read to better understand where our radio bands are located on the big radio dial!

1. How fast do radio waves travel? Approximately _____meters per second_____ p. 5
   (All radio waves on all bands travel at the speed of light!)

2. What is the frequency range for High Frequency? _____ p. 6

3. What is the frequency range for VHF? _____ p. 6

4. What is the frequency range for UHF? _____ p. 6

5. You have long-range sky wave privileges on these HF bands? _____ p. 8
(Beacons at 28.200 to 28.300 MHz)

6. What is the 6 meter domestic SSB calling frequency? _____ p. 9

7. What are the upper and lower frequency limits on 2 meters? _____ p. 10

8. What are the frequency limits on the 70 cm band? _____ p. 12

9. What are the frequency limits of ATV Channel 2, 23 cm band? _____ p. 13

10. What are the 4 High Frequency Technician Class bands? _____ p. 16

11. What is another name for CW? _____ p. 16

12. In addition to Morse code, 10 meter privileges include long range _____ p. 16

13. What is the frequency range of voice privileges on 10 meters? _____ p. 16

14. Above what frequency are ham bands shared with other services? _____ p. 17

15. Ask your exam team how to join a local _____ p. 18

A LITTLE HAM HISTORY *(pages 21~26)*

Here is where it all began! From wires to WIRELESS, ham radio takes to the airwaves last century! Nothing to memorize here, but fun reading on our 100 + year history! Good stuff to KNOW on the latest rules and regs for our service! Fill in the blanks here!

1. Ham radio promotes international _____ p. 19

2. When did ham radio licensing begin? _____ p. 20

3. What test requirement has been eliminated for a ham radio license? _____ p. 20

4. What are the 3 grades of current ham radio licenses? _____ p. 20

5. When did volunteer examiners take over administering ham exams? _____ p. 21

6. Can you jump over Technician to go direct to General without the tech test? _____ p. 21

7. How many examiners are required to give ham radio exams? _____ p. 23

8. Which Exam Element for the Technician Class exam? _____ p. 23

9. New FCC application fee? $_____(Paid over the internet) (Exam fees are $15)____p. 24

10. Which application form will you complete at the exam site? _____ p. 24

11. Long expired licenses may be earned back by passing the technician exam? _____Y / N_____ p. 25

12. Call this number for old-license information or grandfather information: 1-888-277-5289 _____p. 26
VEC Department

GETTING READY FOR THE EXAM *(pages 27~32)*

OK, here is the good stuff. Some of this is on the actual test and here is what you do need to know to get prepared for the Technician Class element 2 exam!

1. How many questions on the Technician Class exam? _____ p. 27

2. How many total questions in the Technician Class question pool? _____ p. 27

3. What is the passing grade for the Element 2 exam? _____ p. 27

4. How often are question pools for each element revised? Every _____ p. 27

5. May the question wording be changed or modified? _____ p. 28

6. How many questions can you get from Sub element T1 Rules? _____ Table 4-1, p. 28

7. In this book, the total question pool has been logically _____ p. 30

8. What color are the key words to study before the exam? _____ p. 31

9. The complete cross reference list of Q&As is found on which pages? _____p. 31

10. Watch videos on YouTube – details here! _____ p. 31

11. Our rearrangement of Q&As begins with which topic? _____ p. 32

12. We finish by covering which important aspect of ham radio? _____ p. 32

Now, on to the questions found in the book. This quiz is fill in the blanks. The test you will take will be multiple choice. On your official FCC test, the questions and answers will be identical to the Q&As found my book. What follows here is a casual stroll through my *Technician Class* book, with my little Gordo humor to keep you on point.

ABOUT HAM RADIO *and* CALL SIGNS *(pages 33~44)*

Here we go with a Gordo-review of test topics, which I paraphrase here. The exact FCC test questions are in my *Technician Class* book. Use the book to easily answer what I ask here and fill in the blanks with a portion of the correct answer! I have reorganized all the materials for classes that I teach, so use only my *Technician Class* book for finding the correct answer with the page numbers here!

1. Which agency regulates and enforces the amateur radio service in the USA? _____ p. 33

2. What is the minimum age for a ham radio license? (hint: no age limit) _____ p. 33

3. Ham licenses are issued for how many years? _____(Renew when 90 days or less.) (No test!)_ p. 35

4. What is the grace period for an expired license? _____ p. 35

5. May you transmit on an expired license?_____Y / N_____p. 35

6. How will the FCC send your license? _____ p. 35

7. No call sign is given while controlling _____ p. 38

8. Could a technician class licensee have a vanity call of KR1XXX?_____Y / N_____p. 39

9. Club call signs may be granted to a club of _____members _____ p. 39

10. Phonetic words for the letters H A M? _____ p. 39

11. What spoken language is used to identify your call sign letter by letter? _____ p. 40

12. If you're licensed in New York, what number will be in your first call sign? _____ p. 41

13. Which ITU region are we in? _____ p. 41

14. May we send third party traffic to Haiti?_____Y / N_____p. 43

15. When visiting Iceland, do we have a US reciprocal agreement? _____ p. 43

16. Great web resource to look up ham radio call signs? _____ p. 44

FABULOUS WEB SITE: www.qrz.com is a fabulous website, from looking up call signs to propagation, and all the fun ham radio news fit to print. Check it out for practice exams, too! It is the number one source of great ham info!

CONTROL *(pages 45~50)*

Most hams know the rules and regulations, so jump right in!

1. Every transmitting station needs to have an_____ operator? _____ p. 45

2. May Technician Class talk to the satellites?_____Y / N_____p. 46

3. May a technician class operator transmit on extra class frequencies?_____Y / N_____p. 47

4. Are school teachers, at work, allowed to demonstrate ham radio in the classroom?____Y / N___p. 49

5. A good web site to find practice exams?_____Exam.tools_____p. 50

Other great web sites are https://www.arrl.org, https://www.eham.net for practice tests, http://aa9pw.com for Morse code and more practice exams.

MIND THE RULES *(pages 51~54)*

The ham radio service is self- policing. You gotta be REAL bad for the FCC to come knocking! Fellow hams are always there to keep us on the straight and narrow path for good operating techniques.

1. Where might you purchase a printed copy of the ham radio Part 97 Rules? (hint: ARRL.org) ___ p. 50

2. Is willful interference allowed on the ham radio service?_____Y / N_____ p. 51

3. What kind of transmission might be prohibited? _____p. 51

4. Give one example of a legal one-way transmission _____p. 52

5. May a ham operator use a voice scrambler for privacy? _____ p. 52

6. May a ham buy or sell, occasionally, their radio gear over the air?_____Y / N_____ p. 53

7. May a technician class operator play music for fun over the air? _____ p. 53

8. What might result if the FCC can't reach you by email? _____ p. 54

TECH FREQUENCIES *(pages 55~64)*

Do not panic ... you do not need to memorize each and every technician class band! That is why I make up band charts that you see in the book. The book has the exact FCC test questions – no more, no less! This fill in the blanks is to get you warmed up to the fun book and audio course.

1. What does the abbreviation “RF” stand for? _____ p. 55

2. What are two components of a radio wave? _____ p. 55

3. The velocity of radio waves through free space in meters is? _____ p. 56

4. Is this velocity the same for all bands?_____Y / N_____ p. 56

5. The abbreviation “MHz” stands for? _____ p. 57

6. Frequency bands are usually identified by? _____ p. 58

7. Frequency and wavelength are inversely proportional. What is that magic number? _____ p. 59

8. 52 MHz is located in which meter band? _____ p. 61

9. 146.52 MHz is located in which meter band? _____ p. 62

10. 446.000 MHz is located on which meter band? _____ p. 62

11. What precaution when transmitting next to a band edge? _____ p. 63

12. Is a band plan “voluntary” or enforced by FCC rules? _____ p. 63

13. 446 MHz Simplex is located on which meter band? (hint hint: the 70cm band) _____ p. 64

14. Where might you score a free color band chart, plus free certificates? _____ p. 208

OK, back to abbreviations…Megahertz is MHz, upper case M and H. Kilohertz is abbreviated lower case k, upper case H, and lower case z = kHz. A ham radio writer is considered a LID (poor operator) for not getting MHz and kHz properly abbreviated!

YOUR FIRST RADIO *(pages 65~68)*

Your very first radio is usually a dual band 2 meter/440 MHz hand held. Buy this radio from an authorized USA ham radio dealer. The imported Chinese radios are more for business band, and not easy to program in the field for ham repeater channels. Support our ham radio service providers – buy local!

1. What does the “PTT” button do on your mic? _____ p. 65

2. Have your radio pre-_____ by your local ham dealer or club_____ p. 65

*** Gordo here. If you purchased a Chinese cheap radio over the internet, it will be mighty difficult to program memory channels in the field, and with no fellow ham to help you, you won't have a clue what repeater frequencies to put in memory, plus the offset, plus the CTCSS tone.

BUY YOUR GEAR FROM USA AUTHORIZED HAM RADIO DEALERS! Then, let the local dealer or local hams help you program that hand held for local channels, to get you started on the air! Join a ham radio club and let them help you clone your radio to favorite local ham repeaters and the International Space Station, (145.800 MHz) plus the Space Station cross band repeater output on 437.800MHz! If you already have ANY hand held radio, find local club members or local fellow hams who can help you get it channeled up for local repeaters! GET LOCAL HELP with your new radio programming!

3. Store favorite frequencies in your radio's _____ p. 65

4. Don't use a rubber duck antenna inside your car_____Y / N_____p. 66

5. What type of modulation is commonly used for 2 meters and the 440 MHz band? _____ p. 67

6. Signals sound _____ if you are off frequency. _____ p. 65

7. Another name for a radio that is controlled by your favorite computer? _____ p. 68
(hint: software defined)

GOING SOLO – YOUR FIRST AMATEUR RADIO TRANSMISSION *(pages 69~78)*

1. Speak into your radio's _____ p. 69

2. Listen to your radio's audio on this: _____ p. 70

3. What circuit silences background noise? _____ p. 70

4. Transmitting and receiving on the same frequency is called what? _____ p. 71

5. We use duplex when transmitting through a (hint: repeater) _____p. 71

6. When you test your radio on the air be sure to do this: _____ p. 71

7. Should you call "CQ" on your local hand held radio? _____p. 72

8. What does CQ mean? _____p. 73

9. Do this before transmitting on any frequency _____ p. 73

10. How do you call another station if you know their call sign? _____ p. 73

***Gordo here. Study my yellow TECHNICIAN CLASS BOOK, page 74, for a fun and smart way to get on the air for the first time. In my book, I also have a free audio course with info on how to make your first on-air call! PAGE 74 IS IMPORTANT!!! PLAY THE AUDIO COURSE DESCRIBED IN THE FRONT OF MY BOOK!

11. What is the "Q" signal for interference? _____ p. 75

12. Someone asks "QTH". What do they want? _____ p. 76

13. Your pal is going "QRT". What does this mean? _____ p. 76

14. Obtain a free certificate and grid square map? _____ p. 208

15. During a radio weekend contest, give only your information and _____ p. 77

16. DMR "Talk Group" only hears specific calls?_____Y / N_____p. 70

REPEATERS *(pages 79~84)*

Repeaters are on building tops and mountain tops for extending your hand held range. Some are even connected to the internet for extending your hand held range around the world to other repeaters. (IRLP) (page 83) Listen for at least a day or two before transmitting on a new repeater to get the hang of things. http://WWW.ARRL.ORG/GORDON-WEST, half way down, for the 45 minute audio sounds!

1. What device re-transmits amateur radio signals from your little handheld? _____ p. 79

2. What is the term describing repeater transmit and repeater receive _____ p. 80

3. What is the usual offset for the 2 meter band? _____p. 80

4. What is the usual repeater offset for the 70 cm band? _____p. 81

5. Most repeaters require CTCSS. What is this? _____ p. 81

6. Who assigns specific frequencies to repeaters? _____ p. 82 & p. 83

7. Do this before transmitting on any ham radio channel. _____p. 83

8. Say THIS instead of CQ on a repeater, to announce that you are listening for a call. _____ p. 83

9. What station inputs one-way to a repeater?_____ p. 80

Repeaters are party lines – everyone is listening, so always pause a few seconds before you pick up the conversation, to let others come in and join your chat. Do not "quick key" a repeater. Again, listen for a day or two to get the hang of how to operate on an open repeater.

EMERGENCY! *(pages 85~90)*

1. Which radio call has the highest priority? _____ p. 85

2. Whose rules prevail when handling emergency radio calls? _____ p. 86

3. What do the letters RACES stand for? _____ p. 86

(Civil defense certified)

4. What do the letters ARES stand for? _____ p. 87

5. What does "NCS" stand for in emergency comms? _____ p. 87

6. The good emergency communicator will always pass a message exactly as _____ p. 89

7. What does the term "check" mean? _____ p. 89

8. Use this alphabet when spelling unusual words? _____ p. 90

9. What station type may relay email traffic? _____ p. 89

WEAK SIGNAL PROPAGATION *(pages 91~100)*

Here we learn how far your radio signals may travel to another station or a distant repeater. On your dual band radio, weather conditions may give your signal an every-July boost! On 10 meters High Frequency, summertime and December sporadic E conditions may refract your 10 meter and 6 meter signals off the ionosphere, and come back down in another state, or another country, during daylight hours. WOW, ham radio will be F U N!

1. How much further do VHF/UHF radio signals travel line of sight? _____ p. 91

2. Are VHF and UHF signals regularly affected by the ionosphere? _____ p. 92

3. Use "knife edge" propagation to transmit over? _____ p. 93

4. A warm air inversion creates what type of propagation? _____ p. 93

5. Catch a falling star and try this? _____ p. 94

6. How many layers are there of the ionosphere during the day? _____ p. 95

7. Ultraviolet radiation from this heavenly body ionizes the ionospheric layers? _____ p. 96

8. Best time for 10 meter Technician Class skywaves? _____ p. 97

9. Which property of a radio wave describes its polarization? _____ p. 99

10. Technician voice (phone) on 10m _____28. ___ ___ ___ _____ p. 99

11. Beacons on 10m_____ 28. ___ ___ ___ _____p. 97

TALK TO OUTER SPACE *(pages 101~106)*

I know… I know… you are spaced out with all this info to learn … but as a new technician class operator, we WANT you space-savvy, to work the heavens!

1. Hear the International Space Station on this frequency during a pass_ FM 437.800 _____ p. 101

2. Are Technician Class operators permitted to transmit to the International Space Station? Y / N p. 102

3. What does LEO refer to? _____ p. 102

4. Signals containing information from a satellite onboard computer? _____p. 103

5. What causes satellite signals to fade in and out? _____p. 104

6. Compensate for this when the satellite is approaching from the horizon. _____p. 104

7. How much power should you use when transmitting to a satellite? _____ p. 105

8. In the U/V mode, on what band do you transmit? _____p. 106

9. Which ham group promotes space communications? _____ p. 106

10. Great WWW to learn how to work satellites _____p. 106

11. Simple satellite portable antenna for hand held operation _____p. 106

12. Find the next satellite pass with this WWW _____ p. 106

YOUR COMPUTER GOES HAM DIGITAL *(pages 107~116)*

1. Is Morse code a digital mode? (hint hint: YES, and it's fun to try!) _____ p. 107

2. The bottom of 6 meter and 2 meter bands is limited to this: _____ p. 107

3. Could your home computer or laptop be rigged up to send and receive CW? _____ p. 108

4. What portion of your computer decodes digital signals? _____p. 109

5. What are packet, IEEE 802.11, JT65 plus the new FT8 modes? _____p. 109

6. What device connects between your transceiver and your computer for digital? _____ p. 110

7. What is the exciting mode APRS where we see you on our computer screen? _____ p. 112

8. An APRS station gets its position from what? _____ p. 112

9. What connects a ham radio station into the internet? _____ p. 113

10. What do the letters IRLP stand for? _____ p. 113

11. What do the letters VOIP stand for? _____ p. 114

12. What is the bandwidth of analog fast-scan ham transmissions on 70 cm? _____ p. 115

13. What is the WWW for the fun ATV fast scan analog/digital modes _____p. 116

MULTI-MODE RADIO EXCITEMENT *(pages 117~128)*

Once you have been on the air with your hand held and mobile FM transceiver, you may want to get a multi-mode base station which will allow for working 10 meters and all the High Frequency Bands. Some multi-mode transceivers let you work 2 meters on single sideband, as well as 432 MHz SSB, to work some of those multi-mode satellites!

1. The fancy name for your transmitter and receiver packaged in one handheld device? _____p. 117

2. What type of transceiver is needed to operate satellite SSB? _____ p. 118

3. Do we use upper or lower sideband on 10 meters? _____ p. 119

4. You mean new technician class operators can work the long range bands too? _____ p. 117

5. What is the name used to describe speech within an RF carrier? _____ p. 120

6. What does the term clarifier stand for in a SSB receiver? _____p. 121

7. What is the bandwidth of an SSB voice signal? _____ p. 120

8. What do the letters “RIT” stand for? _____ p. 121

9. What is the skinny bandwidth of a Morse Code CW signal? _____ p. 122

10. What radio transmission mode has the narrowest bandwidth? _____ p. 122

11. Give the term describing the ability to receive a weak signal? _____ p. 122

12. What is the term describing a radio’s ability to separate multiple signals? _____p. 123

13. What device would convert a 2 meter radio up to 10,000 MHz band? _____ p. 124

Gordo here … on page 124, that is me aboard the boat talking on 10,368.1 MHz microwave frequencies to shore stations hundreds of miles away! You can do this too with your new technician class license. Most important, after you pass the test, GET ON THE AIR!

14. What is a DMR hand held radio? _____ p.125

15. How do you join a DMR digital mobile radio TALK GROUP? _____ p.125

16. What the heck is a DIGIPEATER? _____ p. 125

17. What is a code plug used for? _____p.126

Gordo again … if YOU are into computers, ham radio will ADD some real excitement, using your computer as a software defined radio (SDR), where the computer will fill the screen with radio signals! The new mode “FT8” could let you work other stations all over the world in 15 second data bursts that you can’t even hear over the speaker! And computers set up with repeaters on mountaintops and building tops will let your little hand held radio be heard all over the world on other repeaters, called IRLP. Then there is D-Star, Echolink, DMR, and Broadband-Hamnet – all of these new modes are wide open for you to operate as a technician class operator.

RUN SOME INTERFERENCE PROTECTION *(pages 129~134)*

1. If your hand held radio battery is low, your voice may___(hint: break up)_____ p. 129

2. On a worldwide radio, don’t set the mic gain too _____ p. 129

3. What is the likely source of FM drop outs on your mobile radio transmission? _____p. 130

4. On a 10 meter worldwide radio, do this to block distortion _____ p. 131

5. What type of wires should be used to minimize unwanted signal coupling? _____ p. 131

6. Part 15 devices use high power or low power radio signals?___(hint: low)_____p. 131

7. Your new worldwide 10 meter transceiver comes over your neighbor's computer speakers when you transmit. What may help resolve this common interference? _____ p. 132

8. Put these on your corded telephone to minimize transmit interference? _____ p. 132

9. Distorted 10 meter transmit audio may be cured by using one of these. _____ p. 132

10. Fundamental overload to a TV might be resolved with tightening _____-____ p. 134

Gordo here again – your little 2 meter/440 MHz hand held will seldom interfere with home electronics! The high frequency worldwide 10 meter radio, where you can bounce signals off the ionosphere, may come over nearby computer speakers, and this problem is easily resolved with new shielded speaker wires and common chokes that snap over these wires, seen on page 133. All ham radio stores carry these chokes that simply snap over wires! Easy fix! If you are into electronics big time, look at page 134 at ALL the information available to learn more!

See the video on page 134 "Watch This". Scan the QR code with your smart phone or tablet.

ELECTRONS – GO WITH THE FLOW *(pages 135~147)*

Gordo here ... have you ever been bitten by a frayed lamp cord, or stuck your finger (accidently) in a lamp socket? Feel that nasty BUZZ? This is electricity, so let's dive in and see what it is all about to power your new ham radio gear at the house, SAFELY!

1. What does "EMF" mean? _____ p. 135

2. What is the basic unit of electromotive force? _____ p. 135

3. Name one type of rechargeable battery for your new handheld. _____ p. 136

4. Which battery type, found in your big flashlight, is NOT rechargeable? _____ p. 136

5. What do we call the flow of electrons? _____ p. 137

6. Amperes is the unit used to measure what? _____ p. 137

7. What material is a good electrical conductor? _____ p. 138

8. This device allows current to flow in one direction only. _____ p. 139

9. What component opposes the flow of current in a DC circuit? _____ p. 140

10. A potentiometer is actually a variable? _____ p. 141

11. What material is a good electrical insulator? _____ p. 141

12. Another name for a coil of wire? _____ p. 141

13. The word used to describe energy stored in a magnetic field? _____ p. 142

14. The word used to describe energy stored in an electrical field? _____ p. 143

15. A component that protects from current overload? (hint: fuse) p. 143

16. A component used to turn on and off a circuit? _____ p. 145

17. This device may amplify a signal? _____ p. 145

18. What does the abbreviation "FET" stand for? _____ p. 145

19. Output relative to input is _____ p. 145

Gordo AGAIN…if you ever want to see the best TECHNICAL books for electrical and ham radio, the ARRL HANDBOOK, along with the Naval Electrical & Electronics Training System, are the BEST, with details on page 147. Also check out all the great books we offer on the last page of your home study!

IT'S THE LAW, PER MR. OHM! *(pages 148~154)*

Oh, you are a little rusty on math??? Do not panic – I will make it fun and easy to remember in the book, and right here ... by either multiplying or dividing the smaller number into the larger number for the correct answer. No answers will come out in a fraction – easy stuff! Keep the book handy, and read on! Remember, Voltage (E) is like water pressure at the spigot in your garden. Now turn on the valve, and Current (I) is like the flow in that garden hose. Resistance (R) is like a kink in the hose, restricting the flow of water. The Power (P) to make your lawn look green is water pressure (E) x the current (I) coming out of the hose!

1. Draw 2 different types of Ohm's Law circles: _____ p. 148

2. Power equals _____ x _____ p. 149

3. Voltage equals _____ x _____ p. 150

4. What is the voltage across a 2 Ohm resister with 0.5 amps flowing through it? _____ p. 150

5. What is voltage across each of two parallel components? _____ p. 151

6. If you are calculating current, it is voltage divided by? _____ p. 151

7. What is the current flowing through a 24 Ohm resister connected across 240 volts? _____ p. 152

8. What is the resistance that draws 4 amperes from a 12 volt battery? _____ p. 153

9. In most of the exam calculations, you usually are dividing the larger number by the? _____ p. 153

10. What is voltage across each of two SERIES components? _____ p. 153

11. What circuit has the same CURRENT through all components? _____ p. 153

12. What happens to current at the junction of two components in series? _____ p.153

13. If you are calculating resistance, it is voltage divided by? _____ p. 153

PICTURE THIS! ***(pages 155~166)***

All hams know what simple component diagrams look like. Nothing hard here, but scope out the book to see for yourself what all the squiggly lines mean!

1. What is the name for components depicted on an electrical wiring diagram? _____ p. 155

2. Draw the symbol for a variable inductor. _____ p. 155

3. Draw the symbol for an antenna. _____ p. 156

4. Draw the symbol for a fixed resistor. _____ p. 156

5. Draw the symbol for a transistor. _____ p. 156

6. Draw the symbol for a pilot lamp. _____ p. 156

7. See page 158, Figure T-2, and learn each of the component diagrams! Y / N p. 158

8. A transmit power increase from 10 watts to 20 watts is how many dB increase? _____ p. 160

9. What does LED stand for? _____ p. 162

10. How many volts is 1 kilovolt? _____ p. 163

11. Convert 28,400 kilohertz to megahertz. _____ p. 163

12. How many watts is 500 milliwatts? _____ p. 163

13. A cold solder joint looks like this: _____ p. 165

14. Connecting your Ohm meter on ohms scale to 12 volts DC will result in: _____ p.166

Now that wasn't that hard, was it? That figure T-2 on page 158 is a common test question, so learn to ID each of the squiggles!

ANTENNAS *(pages 167~174)*

1. Polarization of the page 167 dipole is _____ p. 167
   This makes the electrical signal horizontal. A vertical whip leads to the electric field becoming vertical. Just the way it looks!

2. In which direction is the signal strongest from a half wave antenna? _____ p. 168

3. Do this to the half wave antenna to raise its resonant frequency. _____ p. 168

4. What is another name for a quarter wavelength vertical antenna? _____ p. 169

5. What is another name for a beam antenna? _____ p. 169

6. A name for finding unknown signals with a portable beam? _____ p. 170

7. A Yagi antenna is always very _____ p. 172

8. On a VHF or UHF contact, make sure both antennas are of the same _____ p.172

9. Best place to mount a VHF or UHF mobile antenna for best performance … this was an older test question which illustrated a mobile antenna in the center of the car roof, with a hole in the center of the roof for the antenna mounting. Not necessary – a magnetic mount will do fine on the trunk lid, or get a trunk lip mount that won't leave any holes, and is very sturdy and won't blow off! But most important, get your hand held radio hooked up to an outside mobile antenna.

FEED ME WITH SOME GOOD COAX! *(pages 175~184)*

Think of COAX like that garden hose. Coax must handle pressure and volume, and take your transmit radio energy and squirts it to the antenna without leaks. It takes antenna receive signals and dribbles it down to your radio, with no leaks to let in noise on receive.

1. Is coax cable round or flat? _____ p. 175

2. Why is coax cable easy to use? _____ p. 175

3. What is the common impedance of coax for ham radio use? _____ p. 176

4. What type of coaxial cable connector are you likely to find on your new 10 meter high frequency radio? _____ On your dual band hand held? _____ p. 177

5. Frequencies above 400 MHz need this type of waterproof cable connector. _____ p. 177

6. What is a common cause of coax cable failure? _____ p. 177

7. The physically larger size coax usually offers _____ line losses? _____p. 178

8. What is a perfect SWR match between the antenna and the feed line? _____p. 179

9. What's the likely cause of an SWR reading of 4:1? _____ p. 181

10. What device allows you to test a transmit signal without interfering with others? _____ p. 183

Think of "SWR" as garden hose water that leaks out under your thumb, because your neighbor drove over the end of it in the driveway. You no longer have a good thumb connection to squirt out the end of the crunched hose end!

SAFETY FIRST! *(pages185~196)*

WATCH OUT! WATCH OUT! Voltage is dangerous!

1. Good ways to guard against getting shocked? _____ p. 185

2. What does the green wire in an AC power cord provide? _____ p. 185

3. The fuse interrupts power in case of what? _____ p. 186

4. What might happen if you replace a blown 5 amp fuse with a 50 amp fuse? _____ p. 186

5. What health hazard is current passing through your body? _____p. 187

6. If you overcharge a lead acid battery, it could _____p. 188

7. Watch out for these when putting up an antenna or tower! _____p. 188

8. Should you ever climb a tower without a helper and proper safety equipment? _____p. 190

9. Good equipment to wear when climbing up the tower? _____ p. 190

10. Add this to a tower guy turnbuckle for safety _____ p. 190

11. On a crank-up 3-section tower, never climb it unless it is first cranked all the way _____p. 190

12. What is the best type of conductor for RF grounding? _____ p. 191

13. When assessing RF exposure, dramatically raising power output is safe or unsafe? _____ p. 192

14. Keep everyone safe around your radio system by operating at what power output levels? (hint: minimum low not high power) _____ p. 196

15. What might happen if someone accidentally touches your mobile bare whip antenna when someone else is transmitting? _____ p. 196

EXTRA CREDIT!!

TECHNICIAN CLASS HOME STUDY NEW Qs for 2026-2030

Our Gordon West 2026-2030 Technician Class book contains ALL the 409 FCC questions, answers, and explanations, of which 35 will be on the test.

The Technician Class 2026-2030 exam question pool has plenty of reworded (for easier understanding) "new" questions, but alas, the following are my casual worded "new" topics on the test!

To prepare for the "new" test, add these to your current home study homework!

The following questions are my casual worded “new” topics on the test! To prepare for the “new” test, add these to your current home study homework!

1. FCC corresponds to you only using _____p. 54

2. If the FCC can't contact you, you could lose _____p. 54

3. Radio wave electric and magnetic fields are at _____ _____s to each other. _____ p. 55

4. Abbreviation of kilohertz _____ and megahertz _____. _____ p. 57

5. P T T? _____ to _____. _____ p. 65

6. I can't hear you ... turn off your _____ for continuous audio output. _____ p. 70

7. FM signals will break up if tuned in too _____ or _____. _____ p. 73

8. Cancels or adds to 2m reception M_____P_____ propagation. _____ p. 75

9. Two words to describe RACES C_____ D_____ _____ p. 86

10. Vegetation and trees on UHF do this: _____ p. 92

11. 10m Tech phone frequencies ___.____ to ___.____ MHz_____(hint: phone = voice)_____p. 99

12. L E O, a satellite in a _____ _____ _____. _____ p. 102

13. Morse code is also called _____ _____. _____ p. 107

14. Data line computer IN from radio's _____ connector. _____p. 109

15. A digital hot spot could get you on to the _____ p. 109

16. Popular FT8 software ___ ___ ___ ___ - X. _____ p. 110

17. Weather, position, and text messages via ____ ____ ____ ____. _____ p. 112

18. PAIRS of audio tones ___ ___ ___ ___ _____ p. 113

19. Talk groups in a DMR radio use a _____ _____. _____p. 126

20. D-Star radios must have your _____ _____ entered. _____ p. 127

21. No radio, and on your computer, but a license needed for _____ _____ repeater transmitting. _____ p. 127

22. Radio run time on a battery, = _____ _____ rating divided by radio's average current draw. p. 136

23. 50 watts output on 2m draws about _____ amps on high power. _____ p. 139

24. Diode voltage drops, same in all diodes? _____p. 139

25. DC, AC, and RF are opposed by electrical _____ . _____p. 140

26. Bipolar junction transistor has E_____ B_____ C_____. _____ p. 145

27. Transistor with gate, drain, & source _____d - _____t _____ p. 146

28. What is a S P D T and how many circuits will it provide?
_____ _____ _____ _____, _____ circuits _____ p. 157

29. An LED lights with _____ DC current in a circuit. _____p. 162

30. An ohm meter across a good discharged electrolytic capacitor will first jump to minimal

resistance, and then _____ing resistance in time. _____ p. 166

31. What antenna offers maximum gain in one direction? _____ p. 169

32. SWR meters for 2m are selected by _____ and power. Your CB SWR meter won't make it up to 146 MHz. _____ p. 174

33. An AC circuit breaker goes in series with the _____ conductor only. _____ p. 186

34. A lightening arrester needs a big _____ _____. _____ p. 192

35. Who is responsible for station RF exposure limits _____ _____. _____ p. 196

TAKING THE EXAM & RECEIVING YOUR FIRST RADIO LICENSE *(pages 197~208)*

Whew! You made it through the entire list of topics and some fun questions that could be on the test! Great work! Now, here is what the exam room is all about!

1. What number do you call to locate an exam site or a remote test Zoom site? _____ p. 197, 198 & 218

2. Typically, how much cash - does it cost to take the exam? (Remember the FCC fee of $35 later) _____p. 199

3. Are calculators permitted during the exam?_____Y / N_____p. 200

4. Can your exam use different words or numbers? NEVER! What you see in the yellow book is exactly what might be chosen for your test! _____ p. 197

5. If this is your first license, you need to obtain a "FRN"_____Y / N_____p. 198

6. Your email must be legible for the FCC to email your license!! YES YES YES! The FCC will not normally mail out a paper copy – you must easily download it from the FCC site. Follow their email instructions to score your new call sign! _____ p. 200 & p. 204

7. What system may allow you to trade your call sign for one with your initials? _____ p. 203

8. Which page in the book shows me issuing your passing certificate? _____ and tells where to write for that free certificate? _____ p. 208

9. Where, in the book, will you find RF Safety Tables? _____ p. 219
CW abbreviations? _____ p. 223
and the Element 2 Q&A Cross Reference list? _____ p. 225 & 226

10. Morse code is FUN. What page has the chapter on learning the code? _____ p. 209

That's it from me, Gordo! Pass that test, write me for the free graduation package, meet with me at large hamfests, and GET ON THE AIR. Don't even think about the next upgrade license until you GET ON THE AIR!

Questions? Call me Monday through Thursdays, 10AM California time to 4PM California time, at 714 549-5000.

I will hear you on the airwaves real soon!

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