

Week 5 - Technician Class Question Pool

Effective July 1, 2014

Technician Chapter 5, Amateur Radio Equipment

T2B03 (B)

Which of the following describes the muting of receiver audio controlled solely by the presence or absence of an RF signal?

- A. Tone squelch
- B. Carrier squelch
- C. CTCSS
- D. Modulated carrier

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T2C02 (C)

What is one way to recharge a 12-volt lead-acid station battery if the commercial power is out?

- A. Cool the battery in ice for several hours
- B. Add acid to the battery
- C. Connect the battery in parallel with a vehicle's battery and run the engine
- D. All of these choices are correct

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SUBELEMENT T4 - Amateur radio practices and station set up - [2 Exam Questions - 2 Groups]

T4A - Station setup: connecting microphones; reducing unwanted emissions; power source; connecting a computer; RF grounding; connecting digital equipment; connecting an SWR meter

T4A01 (B)

Which of the following is true concerning the microphone connectors on amateur transceivers?

- A. All transceivers use the same microphone connector type
- B. Some connectors include push-to-talk and voltages for powering the microphone
- C. All transceivers using the same connector type are wired identically
- D. Un-keyed connectors allow any microphone to be connected

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T4A02 (D)

How might a computer be used as part of an amateur radio station?

- A. For logging contacts and contact information
- B. For sending and/or receiving CW
- C. For generating and decoding digital signals
- D. All of these choices are correct

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T4A03 (A)

Which is a good reason to use a regulated power supply for communications equipment?

- A. It prevents voltage fluctuations from reaching sensitive circuits
- B. A regulated power supply has FCC approval
- C. A fuse or circuit breaker regulates the power
- D. Power consumption is independent of load

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T4A04 (A)

Where must a filter be installed to reduce harmonic emissions from your station?

- A. Between the transmitter and the antenna
- B. Between the receiver and the transmitter
- C. At the station power supply
- D. At the microphone

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T4A06 (C)

Which of the following would be connected between a transceiver and computer in a packet radio station?

- A. Transmatch
- B. Mixer
- C. Terminal node controller
- D. Antenna

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T4A07 (C)

How is a computer's sound card used when conducting digital communications using a computer?

- A. The sound card communicates between the computer CPU and the video display
- B. The sound card records the audio frequency for video display
- C. The sound card provides audio to the microphone input and converts received audio to digital form
- D. All of these choices are correct

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T4A08 (D)

Which type of conductor is best to use for RF grounding?

- A. Round stranded wire
- B. Round copper-clad steel wire
- C. Twisted-pair cable
- D. Flat strap

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T4A09 (D)

Which of the following could you use to cure distorted audio caused by RF current flowing on the shield of a microphone cable?

- A. Band-pass filter
- B. Low-pass filter
- C. Preamplifier
- D. Ferrite choke

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T4A10 (B)

What is the source of a high-pitched whine that varies with engine speed in a mobile transceiver's receive audio?

- A. The ignition system
- B. The alternator
- C. The electric fuel pump
- D. Anti-lock braking system controllers

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T4A11 (A)

Where should the negative return connection of a mobile transceiver's power cable be connected?

- A. At the battery or engine block ground strap
- B. At the antenna mount
- C. To any metal part of the vehicle
- D. Through the transceiver's mounting bracket

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T4A12 (D)

What could be happening if another operator reports a variable high-pitched whine on the audio from your mobile transmitter?

- A. Your microphone is picking up noise from an open window
- B. You have the volume on your receiver set too high
- C. You need to adjust your squelch control
- D. Noise on the vehicle's electrical system is being transmitted along with your speech audio

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T4B - Operating controls: tuning; use of filters; squelch function; AGC; repeater offset; memory channels

T4B01 (B)

What may happen if a transmitter is operated with the microphone gain set too high?

- A. The output power might be too high
- B. The output signal might become distorted
- C. The frequency might vary
- D. The SWR might increase

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T4B02 (A)

Which of the following can be used to enter the operating frequency on a modern transceiver?

- A. The keypad or VFO knob
- B. The CTCSS or DTMF encoder
- C. The Automatic Frequency Control
- D. All of these choices are correct

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T4B03 (D)

What is the purpose of the squelch control on a transceiver?

- A. To set the highest level of volume desired
- B. To set the transmitter power level
- C. To adjust the automatic gain control
- D. To mute receiver output noise when no signal is being received

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T4B04 (B)

What is a way to enable quick access to a favorite frequency on your transceiver?

- A. Enable the CTCSS tones
- B. Store the frequency in a memory channel
- C. Disable the CTCSS tones
- D. Use the scan mode to select the desired frequency

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T4B05 (C)

Which of the following would reduce ignition interference to a receiver?

- A. Change frequency slightly
- B. Decrease the squelch setting
- C. Turn on the noise blanker
- D. Use the RIT control

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T4B06 (D)

Which of the following controls could be used if the voice pitch of a single-sideband signal seems too high or low?

- A. The AGC or limiter
- B. The bandwidth selection
- C. The tone squelch
- D. The receiver RIT or clarifier

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T4B07 (B)

What does the term "RIT" mean?

- A. Receiver Input Tone
- B. Receiver Incremental Tuning
- C. Rectifier Inverter Test
- D. Remote Input Transmitter

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T4B08 (B)

What is the advantage of having multiple receive bandwidth choices on a multimode transceiver?

- A. Permits monitoring several modes at once
- B. Permits noise or interference reduction by selecting a bandwidth matching the mode
- C. Increases the number of frequencies that can be stored in memory
- D. Increases the amount of offset between receive and transmit frequencies

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T4B09 (C)

Which of the following is an appropriate receive filter bandwidth to select in order to minimize noise and interference for SSB reception?

- A. 500 Hz
- B. 1000 Hz
- C. 2400 Hz
- D. 5000 Hz

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T4B10 (A)

Which of the following is an appropriate receive filter bandwidth to select in order to minimize noise and interference for CW reception?

- A. 500 Hz
- B. 1000 Hz
- C. 2400 Hz
- D. 5000 Hz

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T4B11 (C)

Which of the following describes the common meaning of the term "repeater offset"?

- A. The distance between the repeater's transmit and receive antennas
- B. The time delay before the repeater timer resets
- C. The difference between the repeater's transmit and receive frequencies
- D. Matching the antenna impedance to the feed line impedance

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T4B12 (A)

What is the function of automatic gain control or AGC?

- A. To keep received audio relatively constant
- B. To protect an antenna from lightning
- C. To eliminate RF on the station cabling
- D. An asymmetric goniometer control used for antenna matching

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T5A06 (A)

How much voltage does a mobile transceiver usually require?

- A. About 12 volts
- B. About 30 volts
- C. About 120 volts
- D. About 240 volts

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T6A10 (D)

Which of the following battery types is rechargeable?

- A. Nickel-metal hydride
- B. Lithium-ion
- C. Lead-acid gel-cell
- D. All of these choices are correct

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T6A11 (B)

Which of the following battery types is not rechargeable?

- A. Nickel-cadmium
- B. Carbon-zinc
- C. Lead-acid
- D. Lithium-ion

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T6D12 (C)

Which of the following is a common reason to use shielded wire?

- A. To decrease the resistance of DC power connections
- B. To increase the current carrying capability of the wire
- C. To prevent coupling of unwanted signals to or from the wire
- D. To couple the wire to other signals

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T7A07 (D)

What is meant by term "PTT"?

- A. Pre-transmission tuning to reduce transmitter harmonic emission
- B. Precise tone transmissions used to limit repeater access to only certain signals
- C. A primary transformer tuner use to match antennas
- D. The push to talk function which switches between receive and transmit

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T7A10 (B)

What device increases the low-power output from a handheld transceiver?

- A. A voltage divider
- B. An RF power amplifier
- C. An impedance network
- D. All of these choices are correct

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T7B - Common transmitter and receiver problems: symptoms of overload and overdrive; distortion; causes of interference; interference and consumer electronics; part 15 devices; over and under modulation; RF feedback; off frequency signals; fading and noise; problems with digital communications interfaces

T7B01 (D)

What can you do if you are told your FM handheld or mobile transceiver is over-deviating?

- A. Talk louder into the microphone
- B. Let the transceiver cool off
- C. Change to a higher power level
- D. Talk farther away from the microphone

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T7B02 (A)

What would cause a broadcast AM or FM radio to receive an amateur radio transmission unintentionally?

- A. The receiver is unable to reject strong signals outside the AM or FM band
- B. The microphone gain of the transmitter is turned up too high
- C. The audio amplifier of the transmitter is overloaded
- D. The deviation of an FM transmitter is set too low

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T7B03 (D)

Which of the following may be a cause of radio frequency interference?

- A. Fundamental overload
- B. Harmonics
- C. Spurious emissions
- D. All of these choices are correct

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T7B04 (D)

Which of the following is a way to reduce or eliminate interference by an amateur transmitter to a nearby telephone?

- A. Put a filter on the amateur transmitter
- B. Reduce the microphone gain
- C. Reduce the SWR on the transmitter transmission line
- D. Put a RF filter on the telephone

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T7B05 (A)

How can overload of a non-amateur radio or TV receiver by an amateur signal be reduced or eliminated?

- A. Block the amateur signal with a filter at the antenna input of the affected receiver
- B. Block the interfering signal with a filter on the amateur transmitter
- C. Switch the transmitter from FM to SSB
- D. Switch the transmitter to a narrow-band mode

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T7B06 (A)

Which of the following actions should you take if a neighbor tells you that your station's transmissions are interfering with their radio or TV reception?

- A. Make sure that your station is functioning properly and that it does not cause interference to your own radio or television when it is tuned to the same channel
- B. Immediately turn off your transmitter and contact the nearest FCC office for assistance
- C. Tell them that your license gives you the right to transmit and nothing can be done to reduce the interference
- D. Install a harmonic doubler on the output of your transmitter and tune it until the interference is eliminated

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T7B07 (D)

Which of the following may be useful in correcting a radio frequency interference problem?

- A. Snap-on ferrite chokes
- B. Low-pass and high-pass filters
- C. Band-reject and band-pass filters
- D. All of these choices are correct

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T7B08 (D)

What should you do if something in a neighbor's home is causing harmful interference to your amateur station?

- A. Work with your neighbor to identify the offending device
- B. Politely inform your neighbor about the rules that prohibit the use of devices which cause interference
- C. Check your station and make sure it meets the standards of good amateur practice
- D. All of these choices are correct

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T7B09 (A)

What is a Part 15 device?

- A. An unlicensed device that may emit low powered radio signals on frequencies used by a licensed service
- B. A type of amateur radio that can legally be used in the citizen's band
- C. A device for long distance communications using special codes sanctioned by the International Amateur Radio Union
- D. A type of test set used to determine whether a transmitter is in compliance with FCC regulation 91.15

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T7B11 (C)

What is a symptom of RF feedback in a transmitter or transceiver?

- A. Excessive SWR at the antenna connection
- B. The transmitter will not stay on the desired frequency
- C. Reports of garbled, distorted, or unintelligible transmissions
- D. Frequent blowing of power supply fuses

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T7B12 (D)

What might be the first step to resolve cable TV interference from your ham radio transmission?

- A. Add a low pass filter to the TV antenna input
- B. Add a high pass filter to the TV antenna input
- C. Add a preamplifier to the TV antenna input
- D. Be sure all TV coaxial connectors are installed properly

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T7C - Antenna measurements and troubleshooting: measuring SWR; dummy loads; coaxial cables; feed line failure modes

T7C01 (A)

What is the primary purpose of a dummy load?

- A. To prevent the radiation of signals when making tests
- B. To prevent over-modulation of your transmitter
- C. To improve the radiation from your antenna
- D. To improve the signal to noise ratio of your receiver

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T7C13 (B)

What does a dummy load consist of?

- A. A high-gain amplifier and a TR switch
- B. A non-inductive resistor and a heat sink
- C. A low voltage power supply and a DC relay
- D. A 50 ohm reactance used to terminate a transmission line

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T8C11 (A)

What name is given to an amateur radio station that is used to connect other amateur stations to the Internet?

- A. A gateway
- B. A repeater
- C. A digipeater
- D. A beacon

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T8D - Non-voice communications: image signals; digital modes; CW; packet; PSK31; APRS; error detection and correction; NTSC

T8D01 (D)

Which of the following is an example of a digital communications method?

- A. Packet
- B. PSK31
- C. MFSK
- D. All of these choices are correct

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T8D02 (A)

What does the term "APRS" mean?

- A. Automatic Packet Reporting System
- B. Associated Public Radio Station
- C. Auto Planning Radio Set-up
- D. Advanced Polar Radio System

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T8D03 (D)

Which of the following devices provides data to the transmitter when sending automatic position reports from a mobile amateur radio station?

- A. The vehicle speedometer
- B. A WWV receiver
- C. A connection to a broadcast FM sub-carrier receiver
- D. A Global Positioning System receiver

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T8D04 (C)

What type of transmission is indicated by the term NTSC?

- A. A Normal Transmission mode in Static Circuit
- B. A special mode for earth satellite uplink
- C. An analog fast scan color TV signal
- D. A frame compression scheme for TV signals

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T8D05 (A)

Which of the following is an application of APRS (Automatic Packet Reporting System)?

- A. Providing real time tactical digital communications in conjunction with a map showing the locations of stations
- B. Showing automatically the number of packets transmitted via PACTOR during a specific time interval
- C. Providing voice over Internet connection between repeaters
- D. Providing information on the number of stations signed into a repeater

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T8D06 (B)

What does the abbreviation PSK mean?

- A. Pulse Shift Keying
- B. Phase Shift Keying
- C. Packet Short Keying
- D. Phased Slide Keying

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T8D07 (D)

What is PSK31?

- A. A high-rate data transmission mode
- B. A method of reducing noise interference to FM signals
- C. A method of compressing digital television signals
- D. A low-rate data transmission mode

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T8D08 (D)

Which of the following may be included in packet transmissions?

- A. A check sum which permits error detection
- B. A header which contains the call sign of the station to which the information is being sent
- C. Automatic repeat request in case of error
- D. All of these choices are correct

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T8D09 (C)

What code is used when sending CW in the amateur bands?

- A. Baudot
- B. Hamming
- C. International Morse
- D. Gray

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T8D10 (D)

Which of the following can be used to transmit CW in the amateur bands?

- A. Straight Key
- B. Electronic Keyer
- C. Computer Keyboard
- D. All of these choices are correct

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T8D11 (C)

What is an ARQ transmission system?

- A. A special transmission format limited to video signals
- B. A system used to encrypt command signals to an amateur radio satellite
- C. A digital scheme whereby the receiving station detects errors and sends a request to the sending station to retransmit the information
- D. A method of compressing the data in a message so more information can be sent in a shorter time

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T0A09 (C)

What kind of hazard is presented by a conventional 12-volt storage battery?

- A. It emits ozone which can be harmful to the atmosphere
- B. Shock hazard due to high voltage
- C. Explosive gas can collect if not properly vented
- D. All of these choices are correct

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T0A10 (A)

What can happen if a lead-acid storage battery is charged or discharged too quickly?

- A. The battery could overheat and give off flammable gas or explode
- B. The voltage can become reversed
- C. The memory effect will reduce the capacity of the battery
- D. All of these choices are correct

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