

FCC Exam Element 2 Question Pool for Technician Class
Effective 7/01/2018-6/30/2022

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 (D)

What must be considered to determine the minimum current capacity needed for a transceiver power supply?

- A. Efficiency of the transmitter at full power output
- B. Receiver and control circuit power
- C. Power supply regulation and heat dissipation
- D. All of these choices are correct

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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)

Why should wiring between the power source and radio be heavy-gauge wire and kept as short as possible?

- A. To avoid voltage falling below that needed for proper operation
- B. To provide a good counterpoise for the antenna
- C. To avoid RF interference
- D. All of these choices are correct

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T4A04 (C)

Which computer sound card port is connected to a transceiver's headphone or speaker output for operating digital modes?

- A. Headphone output
- B. Mute
- C. Microphone or line input
- D. PCI or SDI

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T4A05 (A)

What is the proper location for an external SWR meter?

- A. In series with the feed line, between the transmitter and antenna
- B. In series with the station's ground
- C. In parallel with the push-to-talk line and the antenna
- D. In series with the power supply cable, as close as possible to the radio

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T4A06 (C)

Which of the following connections might be used between a voice transceiver and a computer for digital operation?

- A. Receive and transmit mode, status, and location
- B. Antenna and RF power
- C. Receive audio, transmit audio, and push-to-talk (PTT)
- D. NMEA GPS location and DC power

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T4A07 (C)

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

- 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 radio's microphone input and converts received audio to digital form
- D. All of these choices are correct

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T4A08 (D)

Which of the following conductors provides the lowest impedance to RF signals?

- 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 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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T4B - Operating controls: tuning; use of filters; squelch function; AGC; transceiver operation; 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

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 for minimizing 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 for minimizing noise and interference for CW reception?

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

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T4B11 (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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T4B12 (B)

Which of the following could be used to remove power line noise or ignition noise?

- A. Squelch
- B. Noise blanker
- C. Notch filter
- D. All of these choices are correct

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T4B13 (C)

Which of the following is a use for the scanning function of an FM transceiver?

- A. To check incoming signal deviation
- B. To prevent interference to nearby repeaters
- C. To scan through a range of frequencies to check for activity
- D. To check for messages left on a digital bulletin board

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