

B-003-014-004 (C)

Why might a dummy antenna get warm when in use?

- A Because it stores radio waves
- B Because it stores electric current
- C Because it changes RF energy into heat
- D Because it absorbs static electricity

B-003-014-005 (C)

What is the circuit called which causes a transmitter to automatically transmit when an operator speaks into its microphone?

- A VCO
- B VFO
- C VOX
- D VXO

B-003-014-006 (A)

What is the reason for using a properly adjusted speech processor with a single-sideband phone transmitter?

- A It improves signal intelligibility at the receiver
- B It reduces average transmitter power requirements
- C It reduces unwanted noise pickup from the microphone
- D It improves voice frequency fidelity

B-003-014-007 (D)

If a single-sideband phone transmitter is 100% modulated, what will a speech processor do to the transmitter's power?

- A It will increase the output PEP
- B It will decrease the peak power output
- C It will decrease the average power output
- D It will add nothing to the output Peak Envelope Power (PEP)

B-003-014-008 (D)

When switching from receive to transmit:

- A the transmit oscillator should be turned off
- B the receiving antenna should be connected
- C the power supply should be off
- D the receiver should be muted

B-003-014-009 (D)

A switching system to enable the use of one antenna for a transmitter and receiver should also:

- A ground the antenna on receive
- B switch between meters
- C disconnect the antenna tuner
- D disable the unit not being used

B-003-014-010 (B)

An antenna changeover switch in a transmitter-receiver combination is necessary:

- A to allow more than one transmitter to be used
- B so that one antenna can be used for transmitter and receiver
- C to change antennas for operation on other frequencies
- D to prevent RF currents entering the receiver circuits

B-003-014-011 (A)

Which of the following components could be used as a dynamic microphone?

- A Loudspeaker
- B Crystal earpiece
- C Resistor
- D Capacitor

B-003-015-001 (B)

What does "connected" mean in an AX.25 packet-radio link?

- A A transmitting and receiving station are using a digipeater, so no other contacts can take place until they are finished
- B A transmitting station is sending data to only one receiving station, it replies that the data is being received correctly
- C A telephone link is working between two stations
- D A message has reached an amateur station for local delivery

B-003-015-002 (B)

What does "monitoring" mean on a packet-radio frequency?

- A Innovation, Science and Economic Development Canada is monitoring all messages
- B A receiving station is displaying messages that may not be sent to it, and is not replying to any message
- C A member of the Amateur Auxiliary is copying all messages
- D A receiving station is displaying all messages sent to it, and replying that the messages are being received correctly

B-003-015-003 (B)

What is a digipeater?

- A A station that retransmits any data that it receives
- B A station that retransmits only data that is marked to be retransmitted
- C A repeater built using only digital electronics parts
- D A repeater that changes audio signals to digital data

B-003-015-004 (D)

What does "network" mean in packet radio?

- A A way of connecting terminal-node controllers by telephone so data can be sent over long distances
- B The connections on terminal-node controllers
- C The programming in a terminal-node controller that rejects other callers if a station is already connected
- D A way of connecting packet-radio stations so data can be sent over long distances

B-003-015-005 (A)

In AX.25 packet-radio operation, what equipment connects to a terminal-node controller?

- A A transceiver, a computer and possibly a GPS receiver
- B A transceiver and a modem
- C A DTMF keypad, a monitor and a transceiver
- D A DTMF microphone, a monitor and a transceiver

B-003-015-006 (A)

How would you modulate a 2 meter FM transceiver to produce packet-radio emissions?

- A Connect a terminal-node controller to the transceiver's microphone input
- B Connect a terminal-node controller to interrupt the transceiver's carrier wave
- C Connect a keyboard to the transceiver's microphone input
- D Connect a DTMF key pad to the transceiver's microphone input

B-003-015-007 (A)

When selecting a RTTY transmitting frequency, what minimum frequency separation from a contact in progress should you allow (center to center) to minimize interference?

- A 250 to 500 Hz
- B Approximately 6 kHz
- C Approximately 3 kHz
- D 60 Hz

B-003-015-008 (A)

Digital transmissions use signals called _____ to transmit the states 1 and 0:

- A mark and space
- B packet and AMTOR
- C Baudot and ASCII
- D dot and dash

B-003-015-009 (B)

Which of the following terms does not apply to packet radio?

- A AX.25
- B Baudot
- C ASCII
- D Automatic Packet Reporting System (APRS)

B-003-015-010 (D)

When using AMTOR transmissions, there are two modes that may be utilized. Mode A uses Automatic Repeat Request (ARQ) protocol and is normally used:

- A at all times. Mode B is for test purposes only
- B only when communications have been completed
- C when making a general call
- D for communications after contact has been established

B-003-015-011 (A)

With a digital communication mode based on a computer sound card, what is the result of feeding too much audio in the transceiver?

- A Splatter or out-of-channel emissions
- B Higher signal-to-noise ratio
- C Lower error rate
- D Power amplifier overheating

B-003-016-001 (B)

How much voltage does a standard automobile battery usually supply?

- A About 9 volts
- B About 12 volts
- C About 240 volts
- D About 120 volts

B-003-016-002 (A)

Which component has a positive and a negative side?

- A A battery
- B A potentiometer
- C A fuse
- D A resistor

B-003-016-003 (C)

A cell, that can be repeatedly recharged by supplying it with electrical energy, is known as a:

- A memory cell
- B primary cell
- C storage cell
- D low leakage cell

B-003-016-004 (D)

Which of the following is a source of electromotive force (EMF)?

- A germanium diode
- B P channel FET
- C carbon resistor
- D lithium-ion battery

B-003-016-005 (B)

An important difference between a conventional flashlight battery and a lead acid battery is that only the lead acid battery:

- A contains an electrolyte
- B can be repeatedly recharged
- C has two terminals
- D can be completely discharged

B-003-016-006 (D)

An alkaline cell has a nominal voltage of 1.5 volts. When supplying a great deal of current, the voltage may drop to 1.2 volts. This is caused by the cell's:

- A electrolyte becoming dry
- B current capacity
- C voltage capacity
- D internal resistance

B-003-016-007 (B)

An inexpensive primary cell in use today is the carbon-zinc or flashlight cell. This type of cell can be recharged:

- A once
- B never
- C twice
- D many times

B-003-016-008 (A)

Battery capacity is commonly stated as a value of current delivered over a specified period of time. What is the effect of exceeding that specified current?

- A A battery charge will not last as long
- B The internal resistance of the cell is short-circuited
- C The battery will accept the subsequent charge in shorter time
- D The voltage delivered will be higher

B-003-016-009 (A)

To increase the current capacity of a cell, several cells should be connected in:

- A parallel
- B series
- C parallel resonant
- D series resonant

B-003-016-010 (D)

To increase the voltage output, several cells are connected in:

- A parallel
- B series-parallel
- C resonance
- D series

B-003-016-011 (A)

A lithium-ion battery should never be:

- A short-circuited
- B recharged
- C left disconnected
- D left overnight at room temperature

B-003-017-001 (A)

If your mobile transceiver works in your car but not in your home, what should you check first?

- A The power supply
- B The speaker
- C The microphone
- D The SWR meter

B-003-017-002 (A)

What device converts household current to 12 volts DC?

- A A power supply
- B A low pass filter
- C An RS-232 interface
- D A catalytic converter

B-003-017-003 (D)

Which of these usually needs a high current capacity power supply?

- A An antenna switch
- B A receiver
- C An SWR meter
- D A transceiver

B-003-017-004 (A)

What may cause a buzzing or hum in the signal of an AC-powered transmitter?

- A A bad filter capacitor in the transmitter's power supply
- B Using an antenna which is the wrong length
- C Energy from another transmitter
- D Bad design of the transmitter's RF power output circuit

B-003-017-005 (C)

A power supply is to supply DC at 12 volts at 5 amperes. The power transformer should be rated higher than:

- A 2.4 watts
- B 6 watts
- C 60 watts
- D 17 watts

B-003-017-006 (A)

The diode is an important part of a simple power supply. It converts AC to DC, since it:

- A allows electrons to flow in only one direction from cathode to anode
- B has a high resistance to AC but not to DC
- C has a high resistance to DC but not to AC
- D allows electrons to flow in only one direction from anode to cathode

B-003-017-007 (C)

To convert AC to pulsating DC, you could use a:

- A capacitor
- B resistor
- C diode
- D transformer

B-003-017-008 (C)

Power-line voltages have been made standard over the years and the voltages generally supplied to homes are approximately:

- A 100 and 200 volts
- B 130 and 260 volts
- C 120 and 240 volts
- D 110 and 220 volts

B-003-017-009 (B)

Your mobile HF transceiver draws 22 amperes on transmit. The manufacturer suggests limiting voltage drop to 0.5 volt and the vehicle battery is 3 metres (10 feet) away. Given the losses below at that current, which minimum wire gauge must you use?

- A Number 8, 0.05 V per metre (0.01 V per foot)
- B Number 10, 0.07 V per metre (0.02 V per foot)
- C Number 14, 0.19 V per metre (0.06 V per foot)
- D Number 12, 0.11 V per metre (0.03 V per foot)

B-003-017-010 (A)

Why are fuses needed as close as possible to the vehicle battery when wiring a transceiver directly to the battery?

- A To prevent an overcurrent situation from starting a fire
- B To prevent interference to the vehicle's electronic systems
- C To reduce the voltage drop in the radio's DC supply
- D To protect the radio from transient voltages

B-003-017-011 (C)

You have a very loud low-frequency hum appearing on your transmission. In what part of the transmitter would you first look for the trouble?

- A The driver circuit
- B The power amplifier circuit
- C The power supply
- D The variable-frequency oscillator

B-003-018-001 (C)

How could you best keep unauthorized persons from using your amateur station at home?

- A Put a "Danger - High Voltage" sign in the station
- B Put fuses in the main power line
- C Use a key-operated on/off switch in the main power line
- D Use a carrier-operated relay in the main power line

B-003-018-002 (D)

How could you best keep unauthorized persons from using a mobile amateur station in your car?

- A Tune the radio to an unused frequency when you are done using it
- B Turn the radio off when you are not using it
- C Put a "Do not touch" sign on the radio
- D Disconnect the microphone when you are not using it

B-003-018-003 (D)

Why would you use a key-operated on/off switch in the main power line of your station?

- A For safety, in case the main fuses fail
- B To keep the power company from turning off your electricity during an emergency
- C For safety, to turn off the station in the event of an emergency
- D To keep unauthorized persons from using your station

B-003-018-004 (B)

Why would there be a switch in a high-voltage power supply to turn off the power if its cabinet is opened?

- A To turn the power supply off when it is not being used
- B To keep anyone opening the cabinet from getting shocked by dangerous high voltages
- C To keep dangerous RF radiation from leaking out through an open cabinet
- D To keep dangerous RF radiation from coming in through an open cabinet

B-003-018-005 (B)

How little electrical current flowing through the human body can be fatal?

- A Current flow through the human body is never fatal
- B As little as 20 milliamperes
- C Approximately 10 amperes
- D More than 20 amperes

B-003-018-006 (D)

Which body organ can be fatally affected by a very small amount of electrical current?

- A The brain
- B The liver
- C The lungs
- D The heart

B-003-018-007 (A)

What is the minimum voltage which is usually dangerous to humans?

- A 30 volts
- B 100 volts
- C 1000 volts
- D 2000 volts

B-003-018-008 (A)

What should you do if you discover someone who is being burned by high voltage?

- A Turn off the power, call for emergency help and provide first-aid if needed
- B Wait for a few minutes to see if the person can get away from the high voltage on their own, then try to help
- C Immediately drag the person away from the high voltage
- D Run from the area so you won't be burned too

B-003-018-009 (A)

What is the safest method to remove an unconscious person from contact with a high voltage source?

- A Turn off the high voltage switch before removing the person from contact with the source
- B Wrap the person in a blanket and pull him to a safe area
- C Call an electrician
- D Remove the person by pulling an arm or a leg

B-003-018-010 (D)

Before checking a fault in a mains operated power supply unit, it would be safest to first:

- A short out leads of filter capacitor
- B check action of capacitor bleeder resistance
- C remove and check fuse from power supply
- D turn off the power and remove power plug

B-003-018-011 (D)

Fault finding in a power supply of an amateur transmitter while the supply is operating is not a recommended technique because of the risk of:

- A damaging the transmitter
- B overmodulation
- C blowing the fuse
- D electric shock

B-003-019-001 (A)

For best protection from electrical shock, what should be grounded in an amateur station?

- A All station equipment
- B The antenna transmission line
- C The AC power line
- D The power supply primary

B-003-019-002 (A)

If a separate ground system is not possible for your amateur station, an alternative indoor grounding point could be:

- A a metallic cold water pipe
- B a plastic cold water pipe
- C a window screen
- D a metallic natural gas pipe

B-003-019-003 (D)

To protect you against electrical shock, the chassis of each piece of your station equipment should be connected to:

- A a dummy load
- B insulated shock mounts
- C the antenna
- D a good ground connection