B-006-002-003 **(B)**

What kind of antenna transmission line is made of two conductors held apart by insulated rods?

A Twisted pair
B Open wire line
C Coaxial cable
D Twin lead in a plastic ribbon

B-006-002-004 **(D)**

What does the term "balun" mean?

A Balanced unloader
B Balanced unmodulator
C Balanced antenna network
D Balanced to unbalanced

B-006-002-005 **(A)**

Where would you install a balun to feed a dipole antenna with 50-ohm coaxial cable?

A Between the coaxial cable and the antenna
B Between the transmitter and the coaxial cable
C Between the antenna and the ground
D Between the coaxial cable and the ground

B-006-002-006 **(A)**

What is an unbalanced line?

A Transmission line with one conductor connected to ground
B Transmission line with neither conductor connected to ground
C Transmission line with both conductors connected to ground
D Transmission line with both conductors connected to each other

B-006-002-007 **(D)**

What device can be installed to feed a balanced antenna with an unbalanced transmission line?

A A triaxial transformer
B A wave trap
C A loading coil
D A balun

B-006-002-008 **(B)**

A flexible coaxial line contains:

A two parallel conductors separated by spacers
B braided shield conductor and insulation around a central conductor
C four or more conductors running parallel
D only one conductor

B-006-002-009 **(D)**

A balanced transmission line:

A has one conductor inside the other
B carries RF current on one wire only
C is made of one conductor only
D is made of two parallel wires

B-006-002-010 **(B)**

A 75 ohm transmission line could be matched to the 300 ohm feed point of an antenna:

A by inserting a diode in one leg of the antenna
B by using a 4 to 1 impedance transformer
C with an extra 250 ohm resistor
D by using a 4 to 1 trigatron

B-006-002-011 **(A)**

What kind of antenna transmission line can be constructed using two conductors which are maintained a uniform distance apart using insulated spreaders?

A 600 ohm open wire line
B Coaxial cable
C 75 ohm twin-lead
D 300 ohm twin-lead

B-006-003-001 **(C)**

Why does coaxial cable make a good antenna transmission line?

A It can be used near metal objects, and its impedance is higher than that of most amateur antennas
B You can make it at home, and its impedance matches most amateur antennas
C It is weatherproof, and its impedance matches most amateur antennas
D It is weatherproof, and its impedance is higher than that of most amateur antennas

B-006-003-002 **(B)**

What is the best antenna transmission line to use, if it must be put near grounded metal objects?

A Twin lead
B Coaxial cable
C Ladder-line
D Twisted pair

B-006-003-003 **(B)**

What are some reasons not to use parallel-conductor transmission line?

A It is difficult to make at home, and it does not work very well with a high SWR
B It does not work well when tied down to metal objects, and you should use a balun and may have to use an impedance-matching device with your transceiver
C You must use an impedance-matching device with your transceiver, and it does not work very well with a high SWR
D It does not work well when tied down to metal objects, and it cannot operate under high power

B-006-003-004 **(B)**

What common connector type usually joins RG-213 coaxial cable to an HF transceiver?

A A binding post connector
B A PL-259 connector
C An F-type cable connector
D A banana plug connector

B-006-003-005 **(C)**

What common connector usually joins a hand-held transceiver to its antenna?

A An F-type cable connector
B A binding post connector
C An SMA connector
D A PL-259 connector

B-006-003-006 **(A)**

Which of these common connectors has the lowest loss at UHF?

A A type-N connector
B An F-type cable connector
C A BNC connector
D A PL-259 connector

B-006-003-007 **(B)**

If you install a 6 metre Yagi on a tower 60 metres (200 ft) from your transmitter, which of the following transmission lines provides the least loss?

A RG-58
B RG-213
C RG-174
D RG-59

B-006-003-008 **(D)**

Why should you regularly clean and tighten all antenna connectors?

A To keep them looking nice
B To keep them from getting stuck in place
C To increase their capacitance
D To help keep their contact resistance at a minimum

B-006-003-009 **(A)**

What commonly available antenna transmission line can be buried directly in the ground for some distance without adverse effects?

A Coaxial cable
B 75 ohm twin-lead
C 600 ohm open wire line
D 300 ohm twin-lead

B-006-003-010 **(C)**

When antenna transmission lines must be placed near grounded metal objects, which of the following transmission lines should be used?

A 600 ohm open wire line
B 75 ohm twin-lead
C Coaxial cable
D 300 ohm twin-lead

B-006-003-011 **(C)**

TV twin-lead transmission line can be used for a transmission line in an amateur station. The impedance of this line is approximately:

A 50 ohms
B 70 ohms
C 300 ohms
D 600 ohms

B-006-004-001 **(C)**

Why should you use only good quality coaxial cable and connectors for a UHF antenna system?

A To keep the power going to your antenna system from getting too high
B To keep the standing wave ratio of your antenna system high
C To keep RF loss low
D To keep television interference high

B-006-004-002 **(D)**

What are some reasons to use parallel-conductor transmission line?

A It has low impedance, and will operate with a high SWR
B It will operate with a high SWR, and it works well when tied down to metal objects
C It has a low impedance, and has less loss than coaxial cable
D It will operate with a high SWR, and has less loss than coaxial cable

B-006-004-003 **(A)**

If your transmitter and antenna are 15 metres (50 ft) apart, but are connected by 60 metres (200 ft) of RG-58 coaxial cable, what should be done to reduce transmission line loss?

A Shorten the excess cable
B Shorten the excess cable so the transmission line is an odd number of wavelengths long
C Roll the excess cable into a coil which is as small as possible
D Shorten the excess cable so the transmission line is an even number of wavelengths long

B-006-004-004 **(C)**

As the length of a transmission line is changed, what happens to signal loss?

A Signal loss is the least when the length is the same as the signal's wavelength
B Signal loss is the same for any length of transmission line
C Signal loss increases as length increases
D Signal loss decreases as length increases

B-006-004-005 **(D)**

As the frequency of a signal is changed, what happens to signal loss in a transmission line?

A Signal loss increases with decreasing frequency
B Signal loss is the least when the signal's wavelength is the same as the transmission line's length
C Signal loss is the same for any frequency
D Signal loss increases with increasing frequency

B-006-004-006 **(D)**

Losses occurring on a transmission line between transmitter and antenna results in:

A an SWR reading of 1:1
B reflections occurring in the line
C the wire radiating RF energy
D less RF power being radiated

B-006-004-007 **(A)**

The lowest loss transmission line on HF is:

A open wire line
B 75 ohm twin-lead
C coaxial cable
D 300 ohm twin-lead

B-006-004-008 **(A)**

In what values are RF transmission line losses expressed?

A dB per unit length
B Ohms per MHz
C dB per MHz
D Ohms per metre

B-006-004-009 **(D)**

If the length of coaxial transmission line is increased from 20 metres (66 ft) to 40 metres (132 ft), how would this affect the line loss?

A It would be reduced by 10%
B It would be increased by 10%
C It would be reduced to 50%
D It would be increased by 100%

B-006-004-010 **(D)**

If the frequency is increased, how would this affect the loss on a transmission line?

A It is independent of frequency
B It depends on the line length
C It would decrease
D It would increase

B-006-005-001 **(C)**

What does an SWR reading of 1:1 mean?

A No power is going to the antenna
B The SWR meter is broken
C The best impedance match has been attained
D An antenna for another frequency band is probably connected

B-006-005-002 **(D)**

What does an SWR reading of less than 1.5:1 mean?

A An impedance match which is too low
B A serious impedance mismatch, something may be wrong with the antenna system
C An antenna gain of 1.5
D A fairly good impedance match

B-006-005-003 **(A)**

What kind of SWR reading may mean poor electrical contact between parts of an antenna system?

A A jumpy reading
B A negative reading
C No reading at all
D A very low reading

B-006-005-004 **(B)**

What does a very high SWR reading mean?

A The signals coming from the antenna are unusually strong, which means very good radio condition
B The antenna is the wrong length for the operating frequency, or the transmission line may be open or short circuited
C The transmitter is putting out more power than normal, showing that it is about to go bad
D There is a large amount of solar radiation, which means very poor radio conditions

B-006-005-005 **(D)**

What does standing-wave ratio mean?

A The ratio of maximum to minimum inductances on a transmission line
B The ratio of maximum to minimum resistances on a transmission line
C The ratio of maximum to minimum impedances on a transmission line
D The ratio of maximum to minimum voltages on a transmission line

B-006-005-006 **(D)**

If your antenna transmission line gets hot when you are transmitting, what might this mean?

A You should transmit using less power
B The conductors in the transmission line are not insulated very well
C The transmission line is too long
D The SWR may be too high, or the transmission line loss may be high

B-006-005-007 **(A)**

If the characteristic impedance of the transmission line does not match the antenna input impedance then:

A standing waves are produced in the transmission line
B heat is produced at the junction
C the SWR reading falls to 1:1
D the antenna will not radiate any signal

B-006-005-008 **(A)**

The result of the presence of standing waves on a transmission line is:

A reduced transfer of RF energy to the antenna
B perfect impedance match between transmitter and transmission line
C maximum transfer of energy to the antenna from the transmitter
D lack of radiation from the transmission line

B-006-005-009 **(C)**

An SWR meter measures the degree of match between transmission line and antenna by:

A measuring the conductor temperature
B inserting a diode in the transmission line
C comparing forward and reflected voltage
D measuring radiated RF energy

B-006-005-010 **(C)**

A resonant antenna having a feed point impedance of 200 ohms is connected to a transmission line which has an impedance of 50 ohms. What will the standing wave ratio of this system be?

A 3:1
B 5:1
C 4:1
D 6:1

B-006-005-011 **(C)**

The type of transmission line best suited to operating at a high standing wave ratio is:

A coaxial line
B 300 ohm twin-lead
C 600 ohm open wire line
D 75 ohm twin-lead

B-006-006-001 **(B)**

What device might allow use of an antenna on a band it was not designed for?

A A high pass filter
B An antenna tuner
C An SWR meter
D A low pass filter

B-006-006-002 **(C)**

What does an antenna tuner do?

A It switches an antenna system to a transmitter when sending, and to a receiver when listening
B It switches a transceiver between different kinds of antennas connected to one transmission line
C It matches a transceiver to a mismatched antenna system
D It helps a receiver automatically tune in stations that are far away

B-006-006-003 **(A)**

What would you use to connect a coaxial cable of 50 ohms impedance to an antenna of 17 ohms impedance?

A An impedance-matching device
B An SWR meter
C A low pass filter
D A terminating resistor

B-006-006-004 **(D)**

When will a power source deliver maximum output to the load?

A When air wound transformers are used instead of iron-core transformers
B When the power-supply fuse rating equals the primary winding current
C When the load resistance is infinite
D When the impedance of the load is equal to the impedance of the source

B-006-006-005 **(D)**

What happens when the impedance of an electrical load is equal to the internal impedance of the power source?

A The electrical load is shorted
B No current can flow through the circuit
C The source delivers minimum power to the load
D The source delivers maximum power to the load

B-006-006-006 **(B)**

Why is impedance matching important?

A To ensure that the resistance and reactance in the circuit are equal
B So the source can deliver maximum power to the load
C So the load will draw minimum power from the source
D To ensure that there is less resistance than reactance in the circuit

B-006-006-007 **(B)**

To obtain efficient power transmission from a transmitter to an antenna requires:

A inductive impedance
B matching of impedances
C high load impedance
D low load resistance

B-006-006-008 **(A)**

To obtain efficient transfer of power from a transmitter to an antenna, it is important that there is a:

A matching of impedance
B high load impedance
C proper method of balance
D low load resistance

B-006-006-009 **(A)**

If an antenna is correctly matched to a transmitter, the length of transmission line:

A will have no effect on the matching
B must be a full wavelength long
C must be an odd number of quarter-wave
D must be an even number of half-waves

B-006-006-010 **(A)**

The reason that an RF transmission line should be matched at the transmitter end is to:

A transfer the maximum amount of power to the antenna
B ensure that the radiated signal has the intended polarization
C prevent frequency drift
D overcome fading of the transmitted signal

B-006-006-011 **(C)**

If the centre impedance of a folded dipole is approximately 300 ohms, and you are using RG8U (50 ohms) coaxial lines, what is the ratio required to have the line and the antenna matched?

A 4:1
B 10:1
C 6:1
D 2:1

B-006-007-001 **(B)**

What does horizontal wave polarization mean?

A The magnetic lines of force of a radio wave are parallel to the Earth's surface
B The electric lines of force of a radio wave are parallel to the Earth's surface
C The electric and magnetic lines of force of a radio wave are perpendicular to the Earth's surface
D The electric lines of force of a radio wave are perpendicular to the Earth's surface

B-006-007-002 **(C)**

What does vertical wave polarization mean?

A The electric and magnetic lines of force of a radio wave are parallel to the Earth's surface
B The electric lines of force of a radio wave are parallel to the Earth's surface
C The electric lines of force of a radio wave are perpendicular to the Earth's surface
D The magnetic lines of force of a radio wave are perpendicular to the Earth's surface

B-006-007-003 **(B)**

What electromagnetic wave polarization does a Yagi antenna have when its elements are parallel to the Earth's surface?

A Circular
B Horizontal
C Helical
D Vertical

B-006-007-004 **(B)**

What electromagnetic wave polarization does a half-wavelength antenna have when it is perpendicular to the Earth's surface?

A Parabolical
B Vertical
C Circular
D Horizontal

B-006-007-005 **(A)**

Polarization of an antenna is determined by:

A the orientation of the electric field relative to the Earth's surface
B the height of the antenna
C the type of antenna
D the magnetic field

B-006-007-006 **(A)**

An isotropic antenna is:

A a hypothetical point source
B an infinitely long piece of wire
C a dummy load
D a half-wave reference dipole