Radio Amateurs of/du Canada

Canadian Basic Amateur Radio Question Bank 2025

These are 201 new questions that have been added to the Basic Qualification Question Bank for Amateur Radio Operator Certificate Examinations.

Each of these is presented with the correct answer.

Most of these replace questions that have been removed from the old Basic Question Bank.

To see the full question bank with all of the possible answers, please refer to the ISED website at:

https://ised-isde.canada.ca/site/amateur-radio-operator-certificate-services/en/amateur-radio-exam-generator

B-001-002-008
What is the fee to issue a replacement call sign with a new prefix, due to a change in address to a new province or territory?
● Free

B-001-002-009
What is the fee for changing an existing call sign (including changing to a two-letter call sign)?
● $60

B-001-003-007
When is an amateur radio operator permitted to transmit false information?
● Transmitting false information is never permitted

B-001-003-008
Interfering with, or obstructing any radio communication, without lawful cause, is prohibited. The person found guilty is liable to what penalty?
● A fine, not exceeding $5 000, or a prison term not exceeding one year, or both

B-001-005-002
Under what circumstances can an amateur radio operator reprogram a land mobile transmitter on behalf of another person for use on 2 metres?
● Only if the other person holds an Amateur Radio Operator Certificate

B-001-005-005
What regulatory requirement must be met to allow you to repair an amateur radio transmitter on behalf of another person?
● Both you and the other person must hold Amateur Radio Operator Certificates

B-001-005-006
What regulatory requirement must be met to allow you to place an amateur radio transmitter in service on behalf of another person?
● Both you and the other person must hold Amateur Radio Operator Certificates

B-001-006-004
When is it permissible to use amateur radio equipment, with or without modification, to transmit outside amateur radio bands?
● Never, amateur radio equipment is not certified for operation outside amateur radio bands

B-001-008-003
What minimum qualifications must an amateur radio operator hold to assemble commercially available transmitter kits of professional design?
● Basic

B-001-008-007
What minimum qualifications must an amateur radio operator hold to operate cross-band repeaters?
● Basic

B-001-008-008
What minimum qualifications must an amateur radio operator hold to remotely operate a transmitter, including changing frequency, emission mode or output power?
● Basic and Advanced

B-001-013-010
What are the station identification requirements for a test transmission?
● The rules are the same for a test or a radio contact

B-001-014-002
In what circumstances can foreign amateur radio operators, other than United States citizens, operate while visiting Canada?
● Their country has an agreement with Canada and the amateur radio operator has obtained the appropriate permit

B-001-014-003
Canadian amateur radio operators may use their stations to transmit international communications on behalf of a third party:
● because Canada does not prohibit international communications on behalf of third parties

B-001-014-005
Foreign amateur radio operators may operate in Canada if they qualify for a CEPT (European Conference of Postal and Telecommunications Administrations) Amateur Radio Licence. What operating privileges are they granted by Innovation, Science and Economic Development Canada?
● Advanced

B-001-014-009
While operating in Canada, what information must the holder of a United States-issued call sign indicate at least once during a contact?
● Location by city and province

B-001-017-002
For single sideband (SSB) operation, what is the maximum transmitter peak envelope power (PEP) that an amateur radio station may use if the operator holds an Amateur Radio Operator Certificate with Advanced Qualification?
● 2250 watts

B-001-017-003
You have determined the maximum transmitter power that meets RF exposure and radiated power limits. Where do you verify this power is NOT exceeded?
● At the output of the transmitter or external amplifier

B-001-017-006
What is the maximum effective radiated power (ERP), expressed as peak envelope power (PEP), the holder of an Amateur Radio Operator Certificate with Advanced Qualification may use on 60 metres?
● 100 watts

B-001-017-008
On 630 metres and 2200 metres, what key antenna characteristic must be taken into account to comply with power limitations expressed as equivalent isotropically radiated power (EIRP)?
● Gain

B-001-020-004
What do the International Telecommunication Union's Radio Regulations prescribe regarding proficiency in Morse code?
● Administrations determine if proficiency in Morse code is a requirement for authorization

B-001-021-006
A CEPT (European Conference of Postal and Telecommunications Administrations) Amateur Radio Licence allows a qualified Canadian amateur radio operator to operate while visiting any participating country. What minimum level of qualification does a Canadian amateur radio operator need?
● Advanced

B-001-021-007
A Canadian amateur radio operator with a CEPT (European Conference of Postal and Telecommunications Administrations) Amateur Radio Licence operates in a participating country using a voice mode. What form of identification is required?
● Transmit the visited country's prefix, followed by "stroke," followed by their Canadian call sign

B-001-021-008
What minimum level of qualification does a Canadian amateur radio operator need to operate in the United States?
● Basic

B-001-021-009
A Canadian amateur radio operator is operating in the United States using voice. What form of identification is required?
● Transmit their Canadian call sign, followed by "portable" or "mobile" as appropriate, followed by the prefix for the US call area being visited

B-001-024-007
Apart from energy absorption and especially below 10 MHz, what is the second established adverse health effect described in Safety Code 6?
● Nerve stimulation

B-001-025-003
When determining the field strength criterion per Electromagnetic Compatibility Advisory Bulletin EMCAB-2, what type of equipment describes devices often used in home entertainment systems, but not strictly speaking radio apparatus?
● Associated equipment

B-001-025-004
Your neighbour complains that your transmissions interfere with their garage door opener. When determining the applicable field strength criterion in Electromagnetic Compatibility Advisory Bulletin EMCAB-2, what type of equipment is the garage door opener?
● Radio-sensitive equipment

B-002-003-011
When calling a specific station on voice, what is the preferred format for your transmission?
● The call sign of the desired station, followed by "this is" and your call sign

B-002-004-003
You need to transmit to adjust your antenna tuner prior to joining an HF single-sideband net that is in progress. On what frequency should you make the adjustment?
● 3 kHz to 5 kHz away from the net frequency

B-002-005-011
What is the meaning of the Morse code signal "R"?
● All received

B-002-006-007
Your receiver's S-meter is calibrated to a standard of 6 dB per S-unit per a recommendation by the International Amateur Radio Union (IARU). The S-meter shows S9 when receiving a station transmitting with 100 watts. Neglecting propagation changes, what transmitter power would cause your receiver's S-meter to read S8?
● 25 watts

B-002-008-002
You need to summon help while stranded in a remote location, but without immediate risk to life. What priority is your message?
● Urgent

B-002-009-003
While making a contact in a VHF contest, the other operator asks for your grid square. What information is requested?
● Your location expressed as a 4 or 6-character code

B-002-009-010
Your time zone is UTC minus 6 hours. You want to join a net scheduled for 19:00 UTC. What is the local scheduled time?
● 1 PM

B-002-009-011
What is the usefulness of stations CHU, WWV and WWVH to amateur radio operators?
● Provide accurate and precise frequency and time signals

B-003-001-006
In an HF station, what device might allow the use of an antenna on a band it was not designed for?
● An antenna tuner

B-003-001-009
When using an HF transmitter with a solid-state final amplifier, which station component may need to be adjusted when changing frequency?
● Antenna tuner

B-003-002-002
The microphone of an FM transmitter:
● produces an electrical signal from air pressure changes

B-003-002-005
In an FM transmitter, the frequency multiplier:
● produces the FM output carrier frequency

B-003-002-006
In an FM transmitter, which stage produces a useful harmonic?
● Frequency multiplier

B-003-002-007
In an FM transmitter, which stage draws the most electric power?
● Power amplifier

B-003-003-002
In a VHF superheterodyne receiver, which stage must be designed to produce very little noise?
● RF amplifier

B-003-003-003
In a superheterodyne receiver, which stage allows detection to function at a single frequency regardless of the received frequency?
● Mixer

B-003-003-004
In a superheterodyne receiver, which stage sets the received frequency?
● Local oscillator

B-003-003-005
In a superheterodyne receiver, which stage rejects signals on adjacent channels?
● IF filter

B-003-003-006
In a superheterodyne receiver, which stage provides the final signal power to drive the detector?
● IF amplifier

B-003-003-007
In an FM receiver, what is the purpose of the limiter?
● Remove amplitude variations from the received signal

B-003-003-009
In a receiver, which stage is controlled by the volume control?
● AF amplifier

B-003-003-010
In an FM receiver, which stage includes a squelch circuit?
● AF amplifier

B-003-004-001
In a basic CW transmitter, the output from the oscillator is:
● at the transmitted signal's frequency

B-003-004-003
In a basic CW transmitter, why is the oscillator followed by a driver/buffer stage?
● To prevent load changes from shifting the oscillator's frequency

B-003-005-001
In an SSB/CW receiver, what is the purpose of the antenna?
● Convert electromagnetic waves into electrical currents

B-003-005-002
In an SSB/CW receiver, what is the purpose of the radio frequency (RF) amplifier?
● Increase the sensitivity of the receiver

B-003-005-003
In an SSB/CW receiver, what is the purpose of the mixer?
● Convert the received signal into the intermediate frequency

B-003-005-004
In an SSB/CW receiver, what is the purpose of the signal generated by the local oscillator?
● It is mixed with the incoming signal to produce the intermediate frequency

B-003-005-005
In an SSB/CW receiver, what is the purpose of the intermediate frequency (IF) filter?
● Provide most of the selectivity of the receiver

B-003-005-006
In an SSB/CW receiver, what is the purpose of the intermediate frequency (IF) amplifier?
● Provide most of the receiver gain

B-003-005-008
In an SSB/CW receiver, what is the purpose of the signal produced by the beat frequency oscillator (BFO)?
● It is mixed with the IF to recover the transmitted modulation

B-003-005-009
In an SSB/CW receiver, what is the purpose of the audio frequency (AF) amplifier?
● Increase the level of the recovered modulation

B-003-005-010
In an SSB/CW receiver, which stage could include an audio band-pass filter?
● AF amplifier

B-003-006-001
In a single-sideband transmitter, what does the fixed RF oscillator do?
● It produces an RF carrier

B-003-006-003
In a typical single-sideband transmitter, what is the purpose of the filter that follows the balanced modulator?
● Remove the unwanted sideband

B-003-006-004
In a typical single-sideband transmitter, at what frequency is the sideband filter tuned?
● Near the fixed RF oscillator frequency

B-003-006-006
In a single-sideband transmitter, which stage transposes the single-sideband signal to the operating frequency?
● Mixer

B-003-006-007
In a single-sideband transmitter, which stage allows you to adjust the final transmit frequency?
● Variable frequency oscillator

B-003-006-008
In a single-sideband transmitter, which stage normally includes a circuit providing protection from excessive SWR?
● Final amplifier

B-003-006-009
In a single-sideband transmitter, which stage transposes the voice message from the audio spectrum to the radio spectrum?
● Balanced modulator

B-003-007-001
Which of the following is a function of the sound card interface in a station operating computer-based digital modes?
● To convert the received analog audio signal from the transceiver into a digital signal for the computer

B-003-007-002
Which of the following is a function of the sound card interface in a station operating computer-based digital modes?
● To convert the digital signal from the computer into an audio signal that can be transmitted

B-003-007-003
Which of the following is one function of most sound card interfaces in a station operating computer-based digital modes?
● Switch the transceiver between receive and transmit modes

B-003-007-004
Which of the following is a function of the sound card interface in a station operating computer-based digital modes?
● To provide audio frequency coupling between a computer and a transceiver

B-003-007-005
Why are isolation transformers often included in the sound card interface of a station operating computer-based digital modes?
● To prevent the coupling of the transceiver and computer from introducing hum and interference into the transmitted signals

B-003-007-006
Why are some transceivers capable of operating computer-based digital modes without a separate sound card?
● Because they incorporate an audio codec

B-003-008-001
If a linear power supply provides overvoltage protection, where is the voltage monitored?
● At the output of the regulator

B-003-008-002
What is the purpose of the transformer in a linear power supply?
● Convert the AC mains voltage up or down as required and provide isolation

B-003-008-006
In a linear power supply, which stage typically requires a heat sink?
● Voltage regulator

B-003-010-003
What are the two signal parameters presented to the user on the waterfall display (spectrogram) of a modern receiver?
● Amplitude and frequency

B-003-010-004
What is the function of automatic gain control (AGC) in a receiver?
● Limit the change in volume due to large signal strength variations

B-003-010-005
For which of the following emission modes is it important for the receiver to be tuned accurately (within 100 Hz)?
● SSB

B-003-010-007
When receiving a modulated signal, what is the adverse consequence of too narrow a receiver bandwidth?
● Loss of information

B-003-010-008
Apart from sensitivity and selectivity, which of these is the third main indicator of communications receiver performance?
● Dynamic range

B-003-011-003
What is the advantage of using a variable frequency oscillator in a basic CW transmitter?
● Frequency is not constrained to the available crystals

B-003-011-007
You are transmitting using amplitude modulation. What bandwidth does your signal occupy if the highest frequency of your voice is 3 kHz?
● 6 kHz

B-003-011-008
What frequency components are present in the bandwidth of an amplitude modulated signal?
● Carrier and two sidebands

B-003-012-005
Why does the power amplifier of the SSB transmitter need to be linear?
● Voice is unintelligible when amplified by a non-linear amplifier

B-003-012-010
Your SSB transmitter is set to operate lower sideband at 7100 kHz. With a single 1000 Hz tone as modulation, at which frequency is RF transmitted?
● 7099 kHz

B-003-013-001
What causes the loud noise heard from an FM receiver in the absence of a signal?
● The very large gain of stages ahead of the discriminator

B-003-013-002
You are using an FM repeater configured for 5 kHz deviation, but your transmitter is set to 2.5 kHz deviation. What is the consequence?
● Your audio will be low

B-003-014-002
How does an electronic keyer help form good Morse code characters?
● By regulating the lengths of the dits and dahs

B-003-014-003
What do you need to adjust before using a microphone for the first time with a transceiver?
● Microphone gain level

B-003-014-004
What noise management system analyzes noise and signal characteristics to partially remove noise?
● DSP noise reduction

B-003-014-008
In a receiver, what noise management circuit recognizes high-amplitude short-duration pulses and removes them?
● Noise blanker

B-003-015-001
Why can a modern digital radio system transmit voice and images, not just data?
● Any analog information can be converted to digital data

B-003-015-002
What is the fundamental difference between digital and analog data?
● Digital data is encoded as discrete pre-agreed values

B-003-015-005
Why can dozens of FT8 communications occur simultaneously in the space needed for one single-sideband transmission?
● Narrow bandwidth of an FT8 signal

B-003-015-006
Which of these modes can work at the lowest signal-to-noise ratio as measured in a 2500 Hz bandwidth?
● FT8

B-003-015-008
When using a digital mode based on a computer sound card, how can you verify that the transmit audio level is NOT excessive?
● Ask a local station to confirm your signal is free of splatter

B-003-015-009
What feature of packet radio makes it especially useful for emergency communications?
● Reliable messaging (guaranteed delivery or notification of failure)

B-003-015-010
A digital protocol implements automatic repeat request (ARQ). What does it permit?
● Error correction

B-003-016-007
For portable operation, what is the primary advantage of lithium-based batteries over lead-acid batteries?
● High battery capacity per kilogram

B-003-017-001
You construct a simple DC power supply using a transformer, rectifier and filter capacitor. If you use the supply to power a CW transmitter, what problem with signal quality could it cause?
● Chirp

B-003-017-004
Compared to a switching (switch mode) power supply, why may a linear power supply be preferred?
● Lower risk of radio frequency noise

B-003-017-005
In a mobile installation, why should the fuse in the DC line to the transceiver be located as near to the battery as possible?
● To protect the entire circuit

B-003-017-006
Apart from efficiency, what is one advantage of a switching (switch mode) power supply over a linear power supply?
● Reduced physical dimensions and weight

B-003-017-007
Why are heavy-gauge wires used for a 100-watt transceiver's DC power connection?
● To minimize the voltage drop

B-003-018-003
What electrical hazard, if any, does the starter battery in a vehicle present?
● High short-circuit current

B-003-019-002
Established practice demands that all ground electrodes be bonded together with heavy conductors. What protection does this provide in case of a lightning strike?
● Prevents voltage differences between devices

B-003-019-003
Why should you never use a fuse with a higher current rating than specified?
● A fault may cause permanent damage, including a fire

B-003-019-005
You need to work on a power supply that has been taken offline. What is the first thing you should do once the cabinet is open?
● Discharge the filter capacitors

B-003-019-008
You are using an HF off-centre-fed (OCF) unbalanced antenna. When you transmit on SSB, distorted audio and noise are heard from an outboard amplified speaker. What device could you install in the transmission line to mitigate this problem?
● A common-mode choke

B-003-019-009
What is a safe method to discharge power supply filter capacitors?
● Use an insulated shorting stick with an inline resistor

B-003-019-011
Why do fuses have a voltage rating?
● To specify the voltage that can be interrupted without arcing

B-003-020-011
What safety precaution is especially important for a ground-mounted antenna?
● Ensure people are kept at a safe distance

B-003-021-008
How does the power density of an electromagnetic wave change as it propagates away from an antenna in free space?
● It decreases as the square of the distance

B-004-001-010
What term describes the ratio of output power to DC input power of an amplifier?
● Efficiency

B-004-001-011
What is the result of excessive positive feedback in an amplifier stage?
● Oscillations appear

B-004-002-001
A diode is in series in the positive power lead to a transceiver. What is its purpose?
● Reverse polarity protection

B-004-003-005
What prevents the substitution of a PNP transistor with an NPN transistor?
● The polarities are reversed

B-004-003-009
Which electrode of the bipolar transistor controls the output current?
● Base

B-004-003-010
When a bipolar transistor is used as a switch, which electrode controls its state?
● Base

B-004-003-011
If a transistor is alternatively driven into saturation and cut-off, what does it behave like?
● A switch

B-004-004-006
Why is a field-effect transistor considered a high impedance device?
● The gate never conducts current

B-004-005-002
Which two elements of a triode carry the output current?
● Cathode and plate

B-004-005-006
Which electrode of a vacuum triode is the control element?
● Grid

B-004-006-009
Which resistor rating is specified as a given fraction per degree Celsius?
● Temperature coefficient

B-005-001-010
How can a frequency in megahertz be stated in gigahertz?
● Divide by 1 000

B-005-002-003
What do we call the flow of electric charge in a circuit?
● Current

B-005-002-011
Which term describes the direction of current in a DC circuit?
● Polarity

B-005-003-010
When speaking of electrical circuits, what does the term "continuity" mean?
● The circuit is a closed circuit

B-005-003-011
You have acquired a transceiver and connected it to a power supply. When you switch on the power supply, its fuse blows immediately. What circuit malfunction caused the fuse to blow?
● A short circuit

B-005-007-009
Two AC waveforms have the same frequency, but their cycles do not begin at the same instant. What term describes that timing difference?
● Phase

B-005-007-010
What is the shape of the waveform of the electricity supplied from a household receptacle?
● Sine wave (sinusoidal)

B-005-008-010
The power of your transmitter is 100 watts and your transmission line introduces a loss of 6 dB. How much power is delivered to the antenna?
● 25 watts

B-005-009-007
What precaution must you take when using polarized electrolytic capacitors?
● Never apply a reverse voltage

B-005-010-005
What term equals the ratio of AC voltage to AC current in a system or circuit?
● Impedance

B-005-011-001
A transformer with a 120-volt primary voltage supplies 250 watts to a transmitter. Neglecting losses, what is the approximate primary current?
● 2.1 amperes

B-005-011-002
How can a transformer with two windings change impedance?
● By carrying different voltages and currents in each winding

B-005-011-007
A transformer primary winding consumes 10 watts. Neglecting losses, if the secondary voltage is 5 volts, what is the secondary current?
● 2 amperes

B-005-011-009
When is coupling (induction) between two wires maximum?
● When the wires are close and parallel

B-005-012-003
While the resonant frequency of a tuned circuit is a single frequency, the effect of resonance is significant over a certain range of frequencies. What is this range called?
● Bandwidth

B-005-013-005
When measuring the voltage across a circuit component, what does the voltmeter appear to be in the circuit?
● A high value resistance

B-005-013-007
What instrument can provide a direct measurement of power at the output of a transmitter?
● RF wattmeter

B-005-013-010
What term describes the ability of an instrument to display values that are true to reality?
● Accuracy

B-006-001-007
What is the major factor influencing the velocity factor of a coaxial cable?
● Dielectric material

B-006-002-002
What kind of transmission line has two wires side-by-side embedded in insulating material?
● Window line

B-006-002-006
What causes a transmission line to be unbalanced?
● One conductor is connected to ground

B-006-002-008
What device should you use to connect a coaxial cable to window line?
● A balun

B-006-002-010
Your antenna tuner does not have a balanced output and you wish to use window line to feed an HF antenna. What device should you use between the tuner and the transmission line?
● Balun

B-006-003-002
A common-mode current choke can be made by winding coaxial cable on a ferrite toroid. Why is cable with solid dielectric preferred over foam dielectric?
● Less risk of a short due to centre conductor movement

B-006-003-003
Why do most amateur radio antenna systems use coaxial cable, rather than other types of transmission line?
● More usable in a wide variety of settings

B-006-003-006
Which popular RF connector is designed to be moisture resistant?
● N

B-006-003-007
What type of RF connector is commonly used for low-power transceivers and test instruments?
● BNC

B-006-003-009
What type of coaxial outer conductor offers the best shielding?
● Solid shield

B-006-003-011
What is the primary advantage of choosing a coaxial cable with a foam dielectric instead of a solid dielectric?
● Lower loss

B-006-004-002
What is the major advantage of open-wire transmission line?
● It can be operated at high SWR without excessive loss

B-006-005-005
What is the main adverse effect due to operating with high SWR?
● Increased transmission line loss

B-006-005-006
What instrument is useful in adjusting the physical length of an antenna?
● Antenna analyzer

B-006-005-009
What does an SWR meter measure to determine the SWR?
● Forward and reflected voltage

B-006-005-010
What information can be obtained with an antenna analyzer?
● SWR of the antenna system over a range of frequencies

B-006-005-011
What is the effect of line loss on the SWR reading at the station?
● It decreases the SWR, because reflected energy is attenuated

B-006-006-001
Which of the following antenna system conditions will cause a modern solid-state HF transceiver to automatically reduce power?
● Excessive impedance mismatch between transceiver and transmission line

B-006-006-003
An end-fed half-wave antenna (EFHW) has a very high feed point impedance. What device could be used to provide a good match to 50-ohm coaxial cable?
● A transformer

B-006-006-005
What is the advantage of locating an antenna tuner near the antenna feed point, over locating it near the transceiver?
● Less transmission line loss

B-006-006-006
How does an antenna tuner compensate for an impedance mismatch in an antenna system?
● By adding capacitive or inductive reactance

B-006-006-007
What advantage does a transformer present when used for impedance matching at radio frequencies?
● It can be designed to do so over a wide bandwidth

B-006-006-008
Where does impedance matching need to be done to minimize transmission line losses in an antenna system?
● At the junction between the transmission line and antenna

B-006-009-011
An antenna is said to have a gain of 4.1 dBi. How much gain is this over a half-wave dipole antenna?
● 2.0 dB

B-006-010-007
What configuration of radials will match an elevated quarter-wave vertical antenna to a 50-ohm coaxial cable?
● Downward sloping quarter-wave radials

B-006-010-009
How can a vertical antenna, 2 metres in length, be made to resonate in the 80-metre band for mobile use?
● Install an inductor in series with the antenna

B-006-010-011
When using a ground mounted vertical HF antenna, what can you do to reduce ground losses?
● Install a wire ground system (radials) at the antenna base

B-006-011-001
What design feature allows a single Yagi antenna to function on the 20-metre, 15-metre and 10-metre bands?
● Element traps

B-006-011-007
Why are Yagi antennas often used on HF bands from 20 metres to 10 metres?
● Rotatable high-gain antennas become feasible due to shorter element lengths

B-006-012-003
What is the three-dimensional radiation pattern of a half-wavelength dipole in free space?
● A torus (donut shape) around the antenna

B-006-012-006
What is a major advantage of an end-fed half-wave antenna (EFHW)?
● Capable of multi-band operation

B-006-013-006
What is a major disadvantage of a quad antenna, as compared to a Yagi antenna with the same number of elements and boom length?
● More susceptible to weather damage

B-006-013-007
You are constructing an HF delta loop antenna. It is oriented with the bottom element parallel to the ground. Where should you locate the feed point for horizontal polarization?
● In the centre of the bottom element

B-006-013-009
What is the approximate length of the wire for a horizontal loop tuned at 7.15 MHz?
● 42.80 metres

B-007-001-002
What does near vertical incidence sky-wave (NVIS) propagation enable?
● Medium range HF communications, especially in difficult terrain

B-007-001-004
On VHF and higher frequencies, why does the radio horizon extend beyond the visible horizon?
● Normal refraction in the troposphere

B-007-003-006
Assuming constant ionosphere region height, how does a higher radiation angle affect skip distance?
● It decreases, due to the geometry of the signal path

B-007-003-007
On a double-hop path involving the surface of the Earth as a middle point, what phenomenon returns the radio wave to the ionosphere?
● Reflection

B-007-004-004
While using a 2-metre hand-held transceiver in an urban setting, you notice that moving less than one metre can severely attenuate your received signal. What is the likely cause?
● Signals arriving on different paths cancel one another

B-007-006-004
Why is communication possible between two continents at a frequency above the local critical frequency?
● The signal enters the ionosphere at an oblique (inclined) angle

B-007-006-008
What happens daily when the solar UV radiation increases?
● The maximum usable frequency increases

B-007-008-003
What type of VHF/UHF propagation depends upon small variations in density and water-vapour content?
● Tropospheric scatter

B-007-008-010
What is the effect of scattering on a radio wave?
● The wave gets redirected in many directions

B-008-001-006
The signals from two commercial transmitters combine outside your receiver to produce noise on a desired frequency. What type of interference is this?
● Intermodulation

B-008-002-005
If an amateur radio transmission is heard in a device that contains no RF components, what type of interference is this?
● Audio rectification

B-008-003-001
What term describes the undesired creation of new frequency components when one or more signals enter a non-linear device?
● Intermodulation

B-008-003-010
What can cause parasitic oscillations in a stage?
● Unwanted positive feedback

B-008-004-004
What term describes unwanted radio energy transmitted just outside the necessary bandwidth?
● "Out-of-band" emissions

B-008-005-001
What is the frequency response of an ideal notch filter?
● Attenuate one frequency and pass all others

B-008-005-002
A filter attenuates frequencies below its cut-off frequency of 60 MHz. What type of filter is it?
● High-pass

B-008-005-004
Why should the impedance of a filter match the transmission line where it is inserted?
● To avoid unwanted reflection

B-008-005-005
Listening to shortwave on a low-cost software defined receiver (SDR), you hear several stations known to operate on much higher frequencies. What type of filter could help?
● Low-pass

B-008-005-006
You need to install an AC line filter to reduce radio frequency noise heard in your station equipment. What type of frequency response should it have?
● Low-pass

B-008-005-008
In a Field Day operation with separate transmitters assigned to specific bands, what type of filter is needed on the receivers to minimize interference?
● Band-pass

B-008-005-009
A nearby high-power HF broadcast station in the 31-metre band is interfering with your reception on the 40-metre and 30-metre bands. What type of filter is needed on the receiver to minimize interference?
● Band-reject

B-008-005-010
Your 2-metre station suffers receiver overload from several land mobile service transmitters on adjacent bands. What type of filter could help?
● Band-pass

B-008-005-011
A filter attenuates frequencies above its cut-off frequency of 40 MHz. What type of filter is it?
● Low-pass

Total of new Test Items: 201