Section 4.3

G4A01 (B)
What is the purpose of the "notch filter" found on many HF transceivers?
A. To restrict the transmitter voice bandwidth
B. To reduce interference from carriers in the receiver passband
C. To eliminate receiver interference from impulse noise sources
D. To enhance the reception of a specific frequency on a crowded band
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G4A13 (A)
What is one reason to use the attenuator function that is present on many HF transceivers?
A. To reduce signal overload due to strong incoming signals
B. To reduce the transmitter power when driving a linear amplifier
C. To reduce power consumption when operating from batteries
D. To slow down received CW signals for better copy
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G4A16 (C)
How does a noise blanker work?
A. By temporarily increasing received bandwidth
B. By redirecting noise pulses into a filter capacitor
C. By reducing receiver gain during a noise pulse
D. By clipping noise peaks
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G4A17 (A)
What happens as the noise reduction control level in a receiver is increased?
A. Received signals may become distorted
B. Received frequency may become unstable
C. CW signals may become severely attenuated
D. Received frequency may shift several kHz
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G4C12 (A)
Which of the following is an advantage of a receiver DSP IF filter as compared to an analog filter?
A. A wide range of filter bandwidths and shapes can be created
B. Fewer digital components are required
C. Mixing products are greatly reduced
D. The DSP filter is much more effective at VHF frequencies
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G4D01 (A)
What is the purpose of a speech processor as used in a modern transceiver?
A. Increase the intelligibility of transmitted phone signals during poor conditions
B. Increase transmitter bass response for more natural-sounding SSB signals
C. Prevent distortion of voice signals
D. Decrease high-frequency voice output to prevent out-of-band operation
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G4D02 (B)
Which of the following describes how a speech processor affects a transmitted single sideband phone signal?
A. It increases peak power
B. It increases average power
C. It reduces harmonic distortion

D. It reduces intermodulation distortion
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G4D03 (D)
Which of the following can be the result of an incorrectly adjusted speech processor?
A. Distorted speech
B. Splatter
C. Excessive background pickup
D. All these choices are correct
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G4D04 (C)
What does an S meter measure?
A. Conductance
B. Impedance
C. Received signal strength
D. Transmitter power output
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G4D05 (D)
How does a signal that reads 20 dB over S9 compare to one that reads S9 on a receiver, assuming a properly calibrated S meter?
A. It is 10 times less powerful
B. It is 20 times less powerful
C. It is 20 times more powerful
D. It is 100 times more powerful
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G4D06 (A)
Where is an S meter found?
A. In a receiver
B. In an SWR bridge
C. In a transmitter
D. In a conductance bridge
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G4D07 (C)
How much must the power output of a transmitter be raised to change the S meter reading on a distant receiver from S8 to S9?
A. Approximately 1.5 times
B. Approximately 2 times
C. Approximately 4 times
D. Approximately 8 times
~~

G7C05 (D)
Which of the following is an advantage of a direct digital synthesizer (DDS)?
A. Wide tuning range and no need for band switching
B. Relatively high-power output
C. Relatively low power consumption
D. Variable frequency with the stability of a crystal oscillator
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G7C09 (B)

What is the phase difference between the I and Q signals that software-defined radio (SDR) equipment uses for modulation and demodulation?
A. Zero
B. 90 degrees
C. 180 degrees
D. 45 degrees
~~

G7C10 (B)
What is an advantage of using I and Q signals in software-defined radios (SDRs)?
A. The need for high resolution analog-to-digital converters is eliminated
B. All types of modulation can be created with appropriate processing.
C. Minimum detectible signal level is reduced
D. Converting the signal from digital to analog creates mixing products
~~

G7C11 (A)
What is meant by the term "software-defined radio" (SDR)?
A. A radio in which most major signal processing functions are performed by software
B. A radio that provides computer interface for automatic logging of band and frequency
C. A radio that uses crystal filters designed using software
D. A computer model that can simulate performance of a radio to aid in the design process
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G7C12 (C)
What is the frequency above which a low-pass filter's output power is less than half the input power?
A. Notch frequency
B. Neper frequency
C. Cutoff frequency
D. Rolloff frequency
~~

G7C13 (D)
What term specifies a filter's maximum ability to reject signals outside its passband?
A. Notch depth
B. Rolloff
C. Insertion loss
D. Ultimate rejection
~~

G7C14 (A)
The bandwidth of a band-pass filter is measured between what two frequencies?
A. Upper and lower half-power
B. Cutoff and rolloff
C. Pole and zero
D. Image and harmonic
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G7C15 (A)
What term specifies a filter's attenuation inside its passband?
A. Insertion loss
B. Return loss
C. Q
D. Ultimate rejection
~~

G7C16 (A)
Which of the following is a typical application for a Direct Digital Synthesizer?
A. A high-stability variable frequency oscillator in a transceiver
B. A digital voltmeter
C. A digital mode interface between a computer and a transceiver
D. A high-sensitivity radio direction finder
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G8B09 (D)
Why is it good to match receiver bandwidth to the bandwidth of the operating mode?
A. It is required by FCC rules
B. It minimizes power consumption in the receiver
C. It improves impedance matching of the antenna
D. It results in the best signal-to-noise ratio
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G8B12 (A)
What process combines two signals in a non-linear circuit or connection to produce unwanted spurious outputs?
A. Intermodulation
B. Heterodyning
C. Detection
D. Rolloff
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