

General 2015-2019 Quiz 1

1-1 G1A08 Which of the following frequencies is within the General Class portion of the 80-meter band?

- A. 1855 kHz B. 2560 kHz C. 3560 kHz D. 3650 kHz

2 G1B04 Which of the following must be true before amateur stations may provide communications to broadcasters for dissemination to the public?

- A. The communications must directly relate to the immediate safety of human life or protection of property and there must be no other means of communication reasonably available before or at the time of the event
B. The communications must be approved by a local emergency preparedness official and conducted on officially designated frequencies
C. The FCC must have declared a state of emergency
D. All of these choices are correct

3 G1C08 What is the maximum symbol rate permitted for RTTY or data emission transmitted at frequencies below 28 MHz?

- A. 56 kilobaud B. 19.6 kilobaud C. 1200 baud D. 300 baud

4 G1D09 How long is a Certificate of Successful Completion of Examination (CSCE) valid for exam element credit?

- A. 30 days B. 180 days C. 365 days D. For as long as your current license is valid

5 G1E02 When may a 10-meter repeater retransmit the 2-meter signal from a station having a Technician Class control operator?

- A. Under no circumstances
B. Only if the station on 10-meters is operating under a Special Temporary Authorization allowing such retransmission
C. Only during an FCC declared general state of communications emergency
D. Only if the 10-meter repeater control operator holds at least a General Class license

6 G2A03 Which of the following is most commonly used for SSB voice communications in the VHF and UHF bands?

- A. Upper sideband B. Lower sideband
C. Vestigial sideband D. Double sideband

7 G2B02 What is the first thing you should do if you are communicating with another amateur station and hear a station in distress break in?

- A. Continue your communication because you were on the frequency first
B. Acknowledge the station in distress and determine what assistance may be needed
C. Change to a different frequency
D. Immediately cease all transmissions

8 G2C02 What should you do if a CW station sends "QRS"?

- A. Send slower
- B. Change frequency
- C. Increase your power
- D. Repeat everything twice

9 G2D01 What is the Amateur Auxiliary to the FCC?

- A. Amateur volunteers who are formally enlisted to monitor the airwaves for rules violations
- B. Amateur volunteers who conduct amateur licensing examinations
- C. Amateur volunteers who conduct frequency coordination for amateur VHF repeaters
- D. Amateur volunteers who use their station equipment to help civil defense organizations in times of emergency

10 G2E11 What is indicated on a waterfall display by one or more vertical lines adjacent to a PSK31 signal?

- A. Long Path propagation
- B. Backscatter propagation
- C. Insufficient modulation
- D. Overmodulation

11 G3A09 What effect does a high sunspot number have on radio communications?

- A. High-frequency radio signals become weak and distorted
- B. Frequencies above 300 MHz become usable for long-distance communication
- C. Long-distance communication in the upper HF and lower VHF range is enhanced
- D. Microwave communications become unstable

12 G3B08 What does MUF stand for?

- A. The Minimum Usable Frequency for communications between two points
- B. The Maximum Usable Frequency for communications between two points
- C. The Minimum Usable Frequency during a 24 hour period
- D. The Maximum Usable Frequency during a 24 hour period

13 G3C12 Which ionospheric layer is the most absorbent of long skip signals during daylight hours on frequencies below 10 MHz?

- A. The F2 layer
- B. The F1 layer
- C. The E layer
- D. The D layer

14 G4A14 What is likely to happen if a transceiver's ALC system is not set properly when transmitting AFSK signals with the radio using single sideband mode?

- A. ALC will invert the modulation of the AFSK mode
- B. Improper action of ALC distorts the signal and can cause spurious emissions
- C. When using digital modes, too much ALC activity can cause the transmitter to overheat
- D. All of these choices are correct

15 G4B07 What signals are used to conduct a two-tone test?

- A. Two audio signals of the same frequency shifted 90 degrees
- B. Two non-harmonically related audio signals
- C. Two swept frequency tones
- D. Two audio frequency range square wave signals of equal amplitude

16 G4C03 What sound is heard from an audio device or telephone if there is interference from a nearby single sideband phone transmitter?

- A. A steady hum whenever the transmitter is on the air
- B. On-and-off humming or clicking
- C. Distorted speech
- D. Clearly audible speech

17 G4D05 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

18 G4E08 What is the name of the process by which sunlight is changed directly into electricity? A. Photovoltaic conversion

- B. Photon emission
- C. Photosynthesis
- D. Photon decomposition

19 G5A01 What is impedance?

- A. The electric charge stored by a capacitor
- B. The inverse of resistance
- C. The opposition to the flow of current in an AC circuit
- D. The force of repulsion between two similar electric fields

20 G5B07 What value of an AC signal produces the same power dissipation in a resistor as a DC voltage of the same value?

- A. The peak-to-peak value
- B. The peak value
- C. The RMS value
- D. The reciprocal of the RMS value

21 G5C01 What causes a voltage to appear across the secondary winding of a transformer when an AC voltage source is connected across its primary winding?

- A. Capacitive coupling
- B. Displacement current coupling
- C. Mutual inductance
- D. Mutual capacitance

22 G6A10 Which element of a triode vacuum tube is used to regulate the flow of electrons between cathode and plate?

- A. Control grid
- B. Heater
- C. Screen Grid
- D. Trigger electrode

23 G6B09 Which of the following is a characteristic of a liquid crystal display?

- A. It requires ambient or back lighting
- B. It offers a wide dynamic range
- C. It has a wide viewing angle
- D. All of these choices are correct

24 G7A07 What is the output waveform of an unfiltered full-wave rectifier connected to a resistive load?

- A. A series of DC pulses at twice the frequency of the AC input
- B. A series of DC pulses at the same frequency as the AC input
- C. A sine wave at half the frequency of the AC input
- D. A steady DC voltage

25 G7B07 What are the basic components of virtually all sine wave oscillators?

- A. An amplifier and a divider
- B. A frequency multiplier and a mixer
- C. A circulator and a filter operating in a feed-forward loop
- D. A filter and an amplifier operating in a feedback loop

26 G7C05 Which of the following is an advantage of a transceiver controlled by 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

27 G8A10 What is meant by the term flat-topping when referring to a single sideband phone transmission?

- A. Signal distortion caused by insufficient collector current
- B. The transmitter's automatic level control (ALC) is properly adjusted
- C. Signal distortion caused by excessive drive
- D. The transmitter's carrier is properly suppressed

28 G8B09 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

29 G8C04 Which of the following describes Baudot code?

- A. A 7-bit code with start, stop and parity bits
- B. A code using error detection and correction
- C. A 5-bit code with additional start and stop bits
- D. A code using SELCAL and LISTEN

30 G9A13 What standing wave ratio will result when connecting a 50 ohm feed line to an antenna that has a purely resistive 300 ohm feed point impedance?

- A. 1.5:1
- B. 3:1
- C. 6:1
- D. You cannot determine SWR from impedance values

31 G9B07 How does the feed point impedance of a 1/2 wave dipole antenna change as the antenna is lowered below 1/4 wave above ground?

- A. It steadily increases
- B. It steadily decreases
- C. It peaks at about 1/8 wavelength above ground
- D. It is unaffected by the height above ground

32 G9C06 What configuration of the loops of a two-element quad antenna must be used for the antenna to operate as a beam antenna, assuming one of the elements is used as a reflector?

- A. The driven element must be fed with a balun transformer
- B. There must be an open circuit in the driven element at the point opposite the feed point
- C. The reflector element must be approximately 5 percent shorter than the driven element
- D. The reflector element must be approximately 5 percent longer than the driven element

33 G9D01 What does the term NVIS mean as related to antennas?

- A. Nearly Vertical Inductance System
- B. Non-Varying Indicated SWR
- C. Non-Varying Impedance Smoothing
- D. Near Vertical Incidence sky-wave

34 G0A10 What is one thing that can be done if evaluation shows that a neighbor might receive more than the allowable limit of RF exposure from the main lobe of a directional antenna?

- A. Change to a non-polarized antenna with higher gain
- B. Post a warning sign that is clearly visible to the neighbor
- C. Use an antenna with a higher front-to-back ratio
- D. Take precautions to ensure that the antenna cannot be pointed in their direction

35 G0B05 Which of the following conditions will cause a Ground Fault Circuit Interrupter (GFCI) to disconnect the 120 or 240 Volt AC line power to a device?

- A. Current flowing from one or more of the voltage-carrying wires to the neutral wire
- B. Current flowing from one or more of the voltage-carrying wires directly to ground
- C. Overvoltage on the voltage-carrying wires
- D. All of these choices are correct

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- 1 G1A08 (C) [97.301(d)]
- 2 G1B04 (A) [97.113(b)]
- 3 G1C08 (D) [97.307(f)(3)]
- 4 G1D09 (C) [97.9(b)]
- 5 G1E02 (D) [97.205(b)]
- 6 G2A03 (A)
- 7 G2B02 (B)
- 8 G2C02 (A)
- 9 G2D01 (A)
- 10 G2E11 (D)
- 11 G3A09 (C)
- 12 G3B08 (B)
- 13 G3C12 (D)
- 14 G4A14 (B)
- 15 G4B07 (B)
- 16 G4C03 (C)
- 17 G4D05 (D)
- 18 G4E08 (A)
- 19 G5A01 (C)
- 20 G5B07 (C)
- 21 G5C01 (C)
- 22 G6A10 (A)
- 23 G6B09 (A)
- 24 G7A07 (A)
- 25 G7B07 (D)
- 26 G7C05 (D)
- 27 G8A10 (C)
- 28 G8B09 (D)
- 29 G8C04 (C)
- 30 G9A13 (C)
- 31 G9B07 (B)
- 32 G9C06 (D)
- 33 G9D01 (D)
- 34 G0A10 (D)
- 35 G0B05 (B)

General 2015-2019 Quiz 1

General 2015-2019 Quiz 2

2-1 G1A06 Which of the following frequencies is within the General Class portion of the 75-meter phone band?

- A. 1875 kHz B. 3750 kHz C. 3900 kHz D. 4005 kHz

2 G1B12 Who or what determines "'good engineering and good amateur practice" as applied to the operation of an amateur station in all respects not covered by the Part 97 rules?

- A. The FCC B. The Control Operator C. The IEEE D. The ITU

3 G1C03 What is the maximum bandwidth permitted by FCC rules for Amateur Radio stations transmitting on USB frequencies in the 60-meter band?

- A. 2.8 kHz B. 5.6 kHz C. 1.8 kHz D. 3 kHz

4 G1D07 Volunteer Examiners are accredited by what organization?

- A. The Federal Communications Commission
B. The Universal Licensing System
C. A Volunteer Examiner Coordinator
D. The Wireless Telecommunications Bureau

5 G1E12 Under what circumstances are messages that are sent via digital modes exempt from Part 97 third party rules that apply to other modes of communication?

- A. Under no circumstances
B. When messages are encrypted
C. When messages are not encrypted
D. When under automatic control

6 G2A05 Which mode of voice communication is most commonly used on the HF amateur bands?

- A. Frequency modulation B. Double sideband
C. Single sideband D. Phase modulation

7 G2B05 What is the customary minimum frequency separation between SSB signals under normal conditions?

- A. Between 150 and 500 Hz B. Approximately 3 kHz
C. Approximately 6 kHz D. Approximately 10 kHz

8 G2C08 What prosign is sent to indicate the end of a formal message when using CW?

- A. SK B. BK C. AR D. KN

9 G2D04 Which of the following describes an azimuthal projection map?

- A. A map that shows accurate land masses

- B. A map that shows true bearings and distances from a particular location
- C. A map that shows the angle at which an amateur satellite crosses the equator
- D. A map that shows the number of degrees longitude that an amateur satellite appears to move westward at the equator with each orbit

10 G2E13 Which communication system sometimes uses the Internet to transfer messages?

- A. Winlink
- B. RTTY
- C. ARES
- D. Skywarn

11 G3A06 What is a geomagnetic storm?

- A. A sudden drop in the solar flux index
- B. A thunderstorm which affects radio propagation
- C. Ripples in the ionosphere
- D. A temporary disturbance in the Earth's magnetosphere

12 G3B10 What is the approximate maximum distance along the Earth's surface that is normally covered in one hop using the E region?

- A. 180 miles
- B. 1,200 miles
- C. 2,500 miles
- D. 12,000 miles

13 G3C13 What is Near Vertical Incidence Sky-wave (NVIS) propagation?

- A. Propagation near the MUF
- B. Short distance MF or HF propagation using high elevation angles
- C. Long path HF propagation at sunrise and sunset
- D. Double hop propagation near the LUF

14 G4A01 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

15 G4B15 What type of transmitter performance does a two-tone test analyze?

- A. Linearity
- B. Percentage of suppression of carrier and undesired sideband for SSB
- C. Percentage of frequency modulation
- D. Percentage of carrier phase shift

16 G4C10 What could be a symptom of a ground loop somewhere in your station?

- A. You receive reports of "hum" on your station's transmitted signal
- B. The SWR reading for one or more antennas is suddenly very high
- C. An item of station equipment starts to draw excessive amounts of current
- D. You receive reports of harmonic interference from your station

17 G4D02 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

18 G4E11 Which of the following is a disadvantage of using wind as the primary source of power for an emergency station?

- A. The conversion efficiency from mechanical energy to electrical energy is less than 2 percent
- B. The voltage and current ratings of such systems are not compatible with amateur equipment
- C. A large energy storage system is needed to supply power when the wind is not blowing
- D. All of these choices are correct

19 G5A06 How does a capacitor react to AC?

- A. As the frequency of the applied AC increases, the reactance decreases
- B. As the frequency of the applied AC increases, the reactance increases
- C. As the amplitude of the applied AC increases, the reactance increases
- D. As the amplitude of the applied AC increases, the reactance decreases

20 G5B10 What percentage of power loss would result from a transmission line loss of 1 dB?

- A. 10.9 percent
- B. 12.2 percent
- C. 20.5 percent
- D. 25.9 percent

21 G5C06 What is the RMS voltage across a 500-turn secondary winding in a transformer if the 2250-turn primary is connected to 120 VAC?

- A. 2370 volts
- B. 540 volts
- C. 26.7 volts
- D. 5.9 volts

22 G6A01 What is the minimum allowable discharge voltage for maximum life of a standard 12 volt lead acid battery?

- A. 6 volts
- B. 8.5 volts
- C. 10.5 volts
- D. 12 volts

23 G6B01 Which of the following is an analog integrated circuit?

- A. NAND Gate
- B. Microprocessor
- C. Frequency Counter
- D. Linear voltage regulator

24 G7A12 Which symbol in Figure G7-1 represents a multiple-winding transformer?

- A. Symbol 4
- B. Symbol 7
- C. Symbol 6
- D. Symbol 1

25 G7B08 How is the efficiency of an RF power amplifier determined?

- A. Divide the DC input power by the DC output power
- B. Divide the RF output power by the DC input power

- C. Multiply the RF input power by the reciprocal of the RF output power
- D. Add the RF input power to the DC output power

26 G7C07 What is the simplest combination of stages that implement a superheterodyne receiver?

- A. RF amplifier, detector, audio amplifier
- B. RF amplifier, mixer, IF discriminator
- C. HF oscillator, mixer, detector
- D. HF oscillator, prescaler, audio amplifier

27 G8A03 What is the name of the process that changes the instantaneous frequency of an RF wave to convey information?

- A. Frequency convolution
- B. Frequency transformation
- C. Frequency conversion
- D. Frequency modulation

28 G8B03 What is another term for the mixing of two RF signals?

- A. Heterodyning
- B. Synthesizing
- C. Cancellation
- D. Phase inverting

29 G8C03 What part of a data packet contains the routing and handling information?

- A. Directory
- B. Preamble
- C. Header
- D. Footer

30 G9A03 What is the characteristic impedance of flat ribbon TV type twinlead?

- A. 50 ohms
- B. 75 ohms
- C. 100 ohms
- D. 300 ohms

31 G9B04 What is the radiation pattern of a dipole antenna in free space in the plane of the conductor?

- A. It is a figure-eight at right angles to the antenna
- B. It is a figure-eight off both ends of the antenna
- C. It is a circle (equal radiation in all directions)
- D. It has a pair of lobes on one side of the antenna and a single lobe on the other side

32 G9C08 What is meant by the "main lobe" of a directive antenna?

- A. The magnitude of the maximum vertical angle of radiation
- B. The point of maximum current in a radiating antenna element
- C. The maximum voltage standing wave point on a radiating element
- D. The direction of maximum radiated field strength from the antenna

33 G9D04 What is the primary purpose of antenna traps?

- A. To permit multiband operation
- B. To notch spurious frequencies
- C. To provide balanced feed point impedance

D. To prevent out of band operation

34 G0A02 Which of the following properties is important in estimating whether an RF signal exceeds the maximum permissible exposure (MPE)?

A. Its duty cycle

B. Its frequency

C. Its power density

D. All of these choices are correct

35 G0B10 Which of the following is a danger from lead-tin solder?

A. Lead can contaminate food if hands are not washed carefully after handling the solder

B. High voltages can cause lead-tin solder to disintegrate suddenly

C. Tin in the solder can "cold flow" causing shorts in the circuit

D. RF energy can convert the lead into a poisonous gas

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- 1 G1A06 (C) [97.301(d)]
- 2 G1B12 (A) [97.101(a)]
- 3 G1C03 (A) [97.303(h)(1)]
- 4 G1D07 (C) [97.509(b)(1)]
- 5 G1E12 (A) [97.115]
- 6 G2A05 (C)
- 7 G2B05 (B)
- 8 G2C08 (C)
- 9 G2D04 (B)
- 10 G2E13 (A)
- 11 G3A06 (D)
- 12 G3B10 (B)
- 13 G3C13 (B)
- 14 G4A01 (B)
- 15 G4B15 (A)
- 16 G4C10 (A)
- 17 G4D02 (B)
- 18 G4E11 (C)
- 19 G5A06 (A)
- 20 G5B10 (C)
- 21 G5C06 (C)
- 22 G6A01 (C)
- 23 G6B01 (D)
- 24 G7A12 (C)
- 25 G7B08 (B)
- 26 G7C07 (C)
- 27 G8A03 (D)
- 28 G8B03 (A)
- 29 G8C03 (C)
- 30 G9A03 (D)
- 31 G9B04 (A)
- 32 G9C08 (D)
- 33 G9D04 (A)
- 34 G0A02 (D)
- 35 G0B10 (A)

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General 2015-2019 Quiz 3

3-1 G1A04 Which of the following amateur bands is restricted to communication on only specific channels, rather than frequency ranges?

- A. 11 meters
- B. 12 meters
- C. 30 meters
- D. 60 meters

2 G1B09 When may an amateur station transmit communications in which the licensee or control operator has a pecuniary (monetary) interest?

- A. When other amateurs are being notified of the sale of apparatus normally used in an amateur station and such activity is not done on a regular basis
- B. Only when there is no other means of communications readily available
- C. When other amateurs are being notified of the sale of any item with a monetary value less than \$200 and such activity is not done on a regular basis
- D. Never

3 G1C01 What is the maximum transmitting power an amateur station may use on 10.140 MHz

- A. 200 watts PEP output
- B. 1000 watts PEP output
- C. 1500 watts PEP output
- D. 2000 watts PEP output

4 G1D05 Which of the following must a person have before they can be an administering VE for a Technician Class license examination?

- A. Notification to the FCC that you want to give an examination
- B. Receipt of a CSCE for General Class
- C. Possession of a properly obtained telegraphy license
- D. An FCC General Class or higher license and VEC accreditation

5 G1E03 What is required to conduct communications with a digital station operating under automatic control outside the automatic control band segments?

- A. The station initiating the contact must be under local or remote control
- B. The interrogating transmission must be made by another automatically controlled station
- C. No third party traffic maybe be transmitted
- D. The control operator of the interrogating station must hold an Extra Class license

6 G2A02 Which of the following modes is most commonly used for voice communications on the 160-meter, 75-meter, and 40-meter bands?

- A. Upper sideband
- B. Lower sideband
- C. Vestigial sideband
- D. Double sideband

7 G2B12 When is an amateur station allowed to use any means at its disposal to assist another station in distress?

- A. Only when transmitting in RACES
- B. At any time when transmitting in an organized net
- C. At any time during an actual emergency

D. Only on authorized HF frequencies

8 G2C04 What does the Q signal "QRL?" mean?

- A. "Will you keep the frequency clear?"
- B. "Are you operating full break-in" or "Can you operate full break-in?"
- C. "Are you listening only for a specific station?"
- D. "Are you busy?", or "Is this frequency in use?"

9 G2D11 Which HF antenna would be the best to use for minimizing interference?

- A. A quarter-wave vertical antenna
- B. An isotropic antenna
- C. A directional antenna
- D. An omnidirectional antenna

10 G2E05 What is the standard sideband used to generate a JT65 or JT9 digital signal when using AFSK in any amateur band?

- A. LSB
- B. USB
- C. DSB
- D. SSB

11 G3A15 How long does it take charged particles from coronal mass ejections to affect radio propagation on the Earth?

- A. 28 days
- B. 14 days
- C. 4 to 8 minutes
- D. 20 to 40 hours

12 G3B02 Which of the following is a good indicator of the possibility of sky-wave propagation on the 6-meter band?

- A. Short skip sky-wave propagation on the 10-meter band
- B. Long skip sky-wave propagation on the 10-meter band
- C. Severe attenuation of signals on the 10-meter band
- D. Long delayed echoes on the 10-meter band

13 G3C11 Which of the following antenna types will be most effective for skip communications on 40-meters during the day?

- A. A vertical antenna
- B. A horizontal dipole placed between 1/8 and 1/4 wavelength above the ground
- C. A left-hand circularly polarized antenna
- D. A right-hand circularly polarized antenna

14 G4A11 Which of the following is a use for the IF shift control on a receiver?

- A. To avoid interference from stations very close to the receive frequency
- B. To change frequency rapidly
- C. To permit listening on a different frequency from that on which you are transmitting
- D. To tune in stations that are slightly off frequency without changing your transmit frequency

15 G4B10 Which of the following can be determined with a directional wattmeter?

- A. Standing wave ratio
- B. Antenna front-to-back ratio

- C. RF interference
- D. Radio wave propagation

16 G4C12 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

17 G4D01 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

18 G4E02 What is the purpose of a corona ball on a HF mobile antenna?

- A. To narrow the operating bandwidth of the antenna
- B. To increase the "Q" of the antenna
- C. To reduce the chance of damage if the antenna should strike an object
- D. To reduce high voltage discharge from the tip of the antenna

19 G5A03 Which of the following causes opposition to the flow of alternating current in an inductor?

- A. Conductance
- B. Reluctance
- C. Admittance
- D. Reactance

20 G5B06 What is the output PEP from a transmitter if an oscilloscope measures 200 volts peak-to-peak across a 50 ohm dummy load connected to the transmitter output?

- A. 1.4 watts
- B. 100 watts
- C. 353.5 watts
- D. 400 watts

21 G5C04 What is the total resistance of three 100 ohm resistors in parallel?

- A. 0.30 ohms
- B. 0.33 ohms
- C. 33.3 ohms
- D. 300 ohms

22 G6A11 Which of the following solid state devices is most like a vacuum tube in its general operating characteristics?

- A. A bipolar transistor
- B. A field effect transistor
- C. A tunnel diode
- D. A varistor

23 G6B02 What is meant by the term MMIC?

- A. Multi Megabyte Integrated Circuit
- B. Monolithic Microwave Integrated Circuit
- C. Military Manufactured Integrated Circuit

D. Mode Modulated Integrated Circuit

24 G7A02 Which of the following components are used in a power supply filter network?

- A. Diodes
- B. Transformers and transducers
- C. Quartz crystals
- D. Capacitors and inductors

25 G7B13 What is the reason for neutralizing the final amplifier stage of a transmitter?

- A. To limit the modulation index
- B. To eliminate self-oscillations
- C. To cut off the final amplifier during standby periods
- D. To keep the carrier on frequency

26 G7C11 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

27 G8A04 What emission is produced by a reactance modulator connected to a transmitter RF amplifier stage?

- A. Multiplex modulation
- B. Phase modulation
- C. Amplitude modulation
- D. Pulse modulation

28 G8B10 What is the relationship between transmitted symbol rate and bandwidth?

- A. Symbol rate and bandwidth are not related
- B. Higher symbol rates require wider bandwidth
- C. Lower symbol rates require wider bandwidth
- D. Bandwidth is always half the symbol rate

29 G8C06 What action results from a failure to exchange information due to excessive transmission attempts when using PACTOR or WINMOR?

- A. The checksum overflows
- B. The connection is dropped
- C. Packets will be routed incorrectly
- D. Encoding reverts to the default character set

30 G9A06 In what units is RF feed line loss usually expressed?

- A. Ohms per 1000 feet
- B. Decibels per 1000 feet
- C. Ohms per 100 feet
- D. Decibels per 100 feet

31 G9B12 What is the approximate length for a 1/4 wave vertical antenna cut for 28.5 MHz?

- A. 8 feet
- B. 11 feet
- C. 16 feet
- D. 21 feet

32 G9C09 How does the gain of two 3-element horizontally polarized Yagi antennas spaced vertically 1/2 wavelength apart typically compare to the gain of a single 3-element Yagi?

- A. Approximately 1.5 dB higher
- B. Approximately 3 dB higher
- C. Approximately 6 dB higher
- D. Approximately 9 dB higher

33 G9D10 Which of the following describes a Beverage antenna?

- A. A vertical antenna
- B. A broad-band mobile antenna
- C. A helical antenna for space reception
- D. A very long and low directional receiving antenna

34 G0A08 Which of the following steps must an amateur operator take to ensure compliance with RF safety regulations when transmitter power exceeds levels specified in FCC Part 97.13?

- A. Post a copy of FCC Part 97.13 in the station
- B. Post a copy of OET Bulletin 65 in the station
- C. Perform a routine RF exposure evaluation
- D. All of these choices are correct

35 G0B01 Which wire or wires in a four-conductor connection should be attached to fuses or circuit breakers in a device operated from a 240 VAC single phase source?

- A. Only the two wires carrying voltage
- B. Only the neutral wire
- C. Only the ground wire
- D. All wires

General 2015-2019 Quiz 3

- 1 G1A04 (D) [97.303 (h)]
- 2 G1B09 (A) [97.113(a)(3)]
- 3 G1C01 (A) [97.313(c)(1)]
- 4 G1D05 (D) [97.509(b)(3)(i)]
- 5 G1E03 (A) [97.221]
- 6 G2A02 (B)
- 7 G2B12 (C) [97.405(b)]
- 8 G2C04 (D)
- 9 G2D11 (C)
- 10 G2E05 (B)
- 11 G3A15 (D)
- 12 G3B02 (A)
- 13 G3C11 (B)
- 14 G4A11 (A)
- 15 G4B10 (A)
- 16 G4C12 (A)
- 17 G4D01 (A)
- 18 G4E02 (D)
- 19 G5A03 (D)
- 20 G5B06 (B)
- 21 G5C04 (C)
- 22 G6A11 (B)
- 23 G6B02 (B)
- 24 G7A02 (D)
- 25 G7B13 (B)
- 26 G7C11 (A)
- 27 G8A04 (B)
- 28 G8B10 (B)
- 29 G8C06 (B)
- 30 G9A06 (D)
- 31 G9B12 (A)
- 32 G9C09 (B)
- 33 G9D10 (D)
- 34 G0A08 (C)
- 35 G0B01 (A)

General 2015-2019 Quiz 3

General 2015-2019 Quiz 4

4-1 G1A10 Which of the following frequencies is available to a control operator holding a General Class license?

- A. 28.020 MHz
- B. 28.350 MHz
- C. 28.550 MHz
- D. All of these choices are correct

2 G1B07 What are the restrictions on the use of abbreviations or procedural signals in the Amateur Service?

- A. Only "Q" signals are permitted
- B. They may be used if they do not obscure the meaning of a message
- C. They are not permitted
- D. Only "10 codes" are permitted

3 G1C05 Which of the following is a limitation on transmitter power on the 28 MHz band for a General Class control operator?

- A. 100 watts PEP output
- B. 1000 watts PEP output
- C. 1500 watts PEP output
- D. 2000 watts PEP output

4 G1D11 If a person has an expired FCC issued amateur radio license of General Class or higher, what is required before they can receive a new license?

- A. They must have a letter from the FCC showing they once held an amateur or commercial license
- B. There are no requirements other than being able to show a copy of the expired license
- C. The applicant must be able to produce a copy of a page from a call book published in the USA showing his or her name and address
- D. The applicant must pass the current element 2 exam

5 G1E09 What language must be used when identifying your station if you are using a language other than English in making a contact using phone emission?

- A. The language being used for the contact
- B. Any language recognized by the United Nations
- C. English only
- D. English, Spanish, French, or German

6 G2A11 What does the expression "CQ DX" usually indicate?

- A. A general call for any station
- B. The caller is listening for a station in Germany
- C. The caller is looking for any station outside their own country
- D. A distress call

7 G2B11 What frequency should be used to send a distress call?

- A. Whichever frequency has the best chance of communicating the distress message

- B. Only frequencies authorized for RACES or ARES stations
- C. Only frequencies that are within your operating privileges
- D. Only frequencies used by police, fire or emergency medical services

8 G2C10 What does the Q signal "QRN" mean?

- A. Send more slowly
- B. I am troubled by static
- C. Zero beat my signal
- D. Stop sending

9 G2D06 How is a directional antenna pointed when making a "long-path" contact with another station?

- A. Toward the rising Sun
- B. Along the gray line
- C. 180 degrees from its short-path heading
- D. Toward the north

10 G2E09 How do you join a contact between two stations using the PACTOR protocol?

- A. Send broadcast packets containing your call sign while in MONITOR mode
- B. Transmit a steady carrier until the PACTOR protocol times out and disconnects
- C. Joining an existing contact is not possible, PACTOR connections are limited to two stations
- D. Send a NAK response continuously so that the sending station has to pause

11 G3A03 Approximately how long does it take the increased ultraviolet and X-ray radiation from solar flares to affect radio propagation on the Earth?

- A. 28 days
- B. 1 to 2 hours
- C. 8 minutes
- D. 20 to 40 hours

12 G3B12 What factor or factors affect the MUF?

- A. Path distance and location
- B. Time of day and season
- C. Solar radiation and ionospheric disturbances
- D. All of these choices are correct

13 G3C07 What makes HF scatter signals often sound distorted?

- A. The ionospheric layer involved is unstable
- B. Ground waves are absorbing much of the signal
- C. The E-region is not present
- D. Energy is scattered into the skip zone through several different radio wave paths

14 G4A04 What reading on the plate current meter of a vacuum tube RF power amplifier indicates correct adjustment of the plate tuning control?

- A. A pronounced peak
- B. A pronounced dip
- C. No change will be observed
- D. A slow, rhythmic oscillation

15 G4B03 Which of the following is the best instrument to use when checking the keying waveform of a CW transmitter?

- A. An oscilloscope
- B. A field strength meter
- C. A sidetone monitor
- D. A wavemeter

16 G4C08 Which of the following would reduce RF interference caused by common-mode current on an audio cable?

- A. Placing a ferrite choke around the cable
- B. Adding series capacitors to the conductors
- C. Adding shunt inductors to the conductors
- D. Adding an additional insulating jacket to the cable

17 G4D03 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 of these choices are correct

18 G4E09 What is the approximate open-circuit voltage from a fully illuminated silicon photovoltaic cell?

- A. 0.02 VDC
- B. 0.5 VDC
- C. 0.2 VDC
- D. 1.38 VDC

19 G5A12 What is one reason to use an impedance matching transformer?

- A. To minimize transmitter power output
- B. To maximize the transfer of power
- C. To reduce power supply ripple
- D. To minimize radiation resistance

20 G5B14 What is the output PEP from a transmitter if an oscilloscope measures 500 volts peak-to-peak across a 50 ohm resistive load connected to the transmitter output?

- A. 8.75 watts
- B. 625 watts
- C. 2500 watts
- D. 5000 watts

21 G5C10 What is the inductance of three 10 millihenry inductors connected in parallel?

- A. 0.30 henrys
- B. 3.3 henrys
- C. 3.3 millihenrys
- D. 30 millihenrys

22 G6A02 What is an advantage of the low internal resistance of nickel-cadmium batteries?

- A. Long life
- B. High discharge current
- C. High voltage
- D. Rapid recharge

23 G6B11 What is a microprocessor?

- A. A low power analog signal processor used as a microwave detector

- B. A computer on a single integrated circuit
- C. A microwave detector, amplifier, and local oscillator on a single integrated circuit
- D. A low voltage amplifier used in a microwave transmitter modulator stage

24 G7A01 What useful feature does a power supply bleeder resistor provide?

- A. It acts as a fuse for excess voltage
- B. It ensures that the filter capacitors are discharged when power is removed
- C. It removes shock hazards from the induction coils
- D. It eliminates ground loop current

25 G7B02 Which of the following is an advantage of using the binary system when processing digital signals?

- A. Binary "ones" and "zeros" are easy to represent by an "on" or "off" state
- B. The binary number system is most accurate
- C. Binary numbers are more compatible with analog circuitry
- D. All of these choices are correct

26 G7C10 How is Digital Signal Processor filtering accomplished?

- A. By using direct signal phasing
- B. By converting the signal from analog to digital and using digital processing
- C. By differential spurious phasing
- D. By converting the signal from digital to analog and taking the difference of mixing products

27 G8A09 What control is typically adjusted for proper ALC setting on an amateur single sideband transceiver?

- A. The RF clipping level
- B. Transmit audio or microphone gain
- C. Antenna inductance or capacitance
- D. Attenuator level

28 G8B06 What is the total bandwidth of an FM phone transmission having 5 kHz deviation and 3 kHz modulating frequency?

- A. 3 kHz
- B. 5 kHz
- C. 8 kHz
- D. 16 kHz

29 G8C12 Which type of code is used for sending characters in a PSK31 signal?

- A. Varicode
- B. Viterbi
- C. Volumetric
- D. Binary

30 G9A04 What might cause reflected power at the point where a feed line connects to an antenna?

- A. Operating an antenna at its resonant frequency
- B. Using more transmitter power than the antenna can handle
- C. A difference between feed line impedance and antenna feed point impedance
- D. Feeding the antenna with unbalanced feed line

31 G9B02 Which of the following is a common way to adjust the feed point impedance of a quarter wave ground plane vertical antenna to be approximately 50 ohms?

- A. Slope the radials upward
- B. Slope the radials downward
- C. Lengthen the radials
- D. Shorten the radials

32 G9C07 What does "front-to-back ratio" mean in reference to a Yagi antenna?

- A. The number of directors versus the number of reflectors
- B. The relative position of the driven element with respect to the reflectors and directors
- C. The power radiated in the major radiation lobe compared to the power radiated in exactly the opposite direction
- D. The ratio of forward gain to dipole gain

33 G9D06 Which of the following is an advantage of a log periodic antenna?

- A. Wide bandwidth
- B. Higher gain per element than a Yagi antenna
- C. Harmonic suppression
- D. Polarization diversity

34 G0A07 What effect does transmitter duty cycle have when evaluating RF exposure?

- A. A lower transmitter duty cycle permits greater short-term exposure levels
- B. A higher transmitter duty cycle permits greater short-term exposure levels
- C. Low duty cycle transmitters are exempt from RF exposure evaluation requirements
- D. High duty cycle transmitters are exempt from RF exposure requirements

35 G0B13 What must you do when powering your house from an emergency generator?

- A. Disconnect the incoming utility power feed
- B. Insure that the generator is not grounded
- C. Insure that all lightning grounds are disconnected
- D. All of these choices are correct

General 2015-2019 Quiz 4

- 1 G1A10 (D) [97.301(d)]
- 2 G1B07 (B) [97.113(a)(4)]
- 3 G1C05 (C) [97.313(c)(2)]
- 4 G1D11 (D)
- 5 G1E09 (C) [97.119(b)(2)]
- 6 G2A11 (C)
- 7 G2B11 (A) [97.405]
- 8 G2C10 (B)
- 9 G2D06 (C)
- 10 G2E09 (C)
- 11 G3A03 (C)
- 12 G3B12 (D)
- 13 G3C07 (D)
- 14 G4A04 (B)
- 15 G4B03 (A)
- 16 G4C08 (A)
- 17 G4D03 (D)
- 18 G4E09 (B)
- 19 G5A12 (B)
- 20 G5B14 (B)
- 21 G5C10 (C)
- 22 G6A02 (B)
- 23 G6B11 (B)
- 24 G7A01 (B)
- 25 G7B02 (A)
- 26 G7C10 (B)
- 27 G8A09 (B)
- 28 G8B06 (D)
- 29 G8C12 (A)
- 30 G9A04 (C)
- 31 G9B02 (B)
- 32 G9C07 (C)
- 33 G9D06 (A)
- 34 G0A07 (A)
- 35 G0B13 (A)

General 2015-2019 Quiz 4

General 2015-2019 Quiz 5

5-1 G1A02 On which of the following bands is phone operation prohibited?

- A. 160 meters
- B. 30 meters
- C. 17 meters
- D. 12 meters

2 G1B02 With which of the following conditions must beacon stations comply?

- A. A beacon station may not use automatic control
- B. The frequency must be coordinated with the National Beacon Organization
- C. The frequency must be posted on the Internet or published in a national periodical
- D. There must be no more than one beacon signal transmitting in the same band from the same station location

3 G1C09 What is the maximum symbol rate permitted for RTTY or data emission transmitted on the 1.25-meter and 70-centimeter bands?

- A. 56 kilobaud
- B. 19.6 kilobaud
- C. 1200 baud
- D. 300 baud

4 G1D04 Which of the following is a requirement for administering a Technician Class license examination?

- A. At least three General Class or higher VEs must observe the examination
- B. At least two General Class or higher VEs must be present
- C. At least two General Class or higher VEs must be present, but only one need be Extra Class
- D. At least three VEs of Technician Class or higher must observe the examination

5 G1E07 With which foreign countries is third party traffic prohibited, except for messages directly involving emergencies or disaster relief communications?

- A. Countries in ITU Region 2
- B. Countries in ITU Region 1
- C. Every foreign country, unless there is a third party agreement in effect with that country
- D. Any country which is not a member of the International Amateur Radio Union (IARU)

6 G2A06 Which of the following is an advantage when using single sideband as compared to other analog voice modes on the HF amateur bands?

- A. Very high fidelity voice modulation
- B. Less bandwidth used and greater power efficiency
- C. Ease of tuning on receive and immunity to impulse noise
- D. Less subject to interference from atmospheric static crashes

7 G2B09 Who may be the control operator of an amateur station transmitting in RACES to assist relief operations during a disaster?

- A. Only a person holding an FCC issued amateur operator license

- B. Only a RACES net control operator
- C. A person holding an FCC issued amateur operator license or an appropriate government official
- D. Any control operator when normal communication systems are operational

8 G2C11 What does the Q signal "QRV" mean?

- A. You are sending too fast
- B. There is interference on the frequency
- C. I am quitting for the day
- D. I am ready to receive messages

9 G2D10 What is QRP operation?

- A. Remote piloted model control
- B. Low power transmit operation
- C. Transmission using Quick Response Protocol
- D. Traffic relay procedure net operation

10 G2E01 Which mode is normally used when sending an RTTY signal via AFSK with an SSB transmitter?

- A. USB
- B. DSB
- C. CW
- D. LSB

11 G3A05 What is the solar flux index?

- A. A measure of the highest frequency that is useful for ionospheric propagation between two points on the Earth
- B. A count of sunspots which is adjusted for solar emissions
- C. Another name for the American sunspot number
- D. A measure of solar radiation at 10.7 centimeters wavelength

12 G3B07 What does LUF stand for?

- A. The Lowest Usable Frequency for communications between two points
- B. The Longest Universal Function for communications between two points
- C. The Lowest Usable Frequency during a 24 hour period
- D. The Longest Universal Function during a 24 hour period

13 G3C04 What does the term "critical angle" mean as used in radio wave propagation?

- A. The long path azimuth of a distant station
- B. The short path azimuth of a distant station
- C. The lowest takeoff angle that will return a radio wave to the Earth under specific ionospheric conditions
- D. The highest takeoff angle that will return a radio wave to the Earth under specific ionospheric conditions

14 G4A10 What is the purpose of an electronic keyer?

- A. Automatic transmit/receive switching
- B. Automatic generation of strings of dots and dashes for CW operation
- C. VOX operation
- D. Computer interface for PSK and RTTY operation

15 G4B04 What signal source is connected to the vertical input of an oscilloscope when checking the RF envelope pattern of a transmitted signal?

- A. The local oscillator of the transmitter
- B. An external RF oscillator
- C. The transmitter balanced mixer output
- D. The attenuated RF output of the transmitter

16 G4C01 Which of the following might be useful in reducing RF interference to audio frequency devices?

- A. Bypass inductor
- B. Bypass capacitor
- C. Forward-biased diode
- D. Reverse-biased diode

17 G4D04 What does an S meter measure?

- A. Conductance
- B. Impedance
- C. Received signal strength
- D. Transmitter power output

18 G4E04 Why is it best NOT to draw the DC power for a 100 watt HF transceiver from a vehicle's auxiliary power socket?

- A. The socket is not wired with an RF-shielded power cable
- B. The socket's wiring may be inadequate for the current drawn by the transceiver
- C. The DC polarity of the socket is reversed from the polarity of modern HF transceivers
- D. Drawing more than 50 watts from this socket could cause the engine to overheat

19 G5A08 Why is impedance matching important?

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

20 G5B11 What is the ratio of peak envelope power to average power for an unmodulated carrier?

- A. 0.707
- B. 1.00
- C. 1.414
- D. 2.00

21 G5C02 What happens if you reverse the primary and secondary windings of a 4:1 voltage step down transformer?

- A. The secondary voltage becomes 4 times the primary voltage
- B. The transformer no longer functions as it is a unidirectional device

- C. Additional resistance must be added in series with the primary to prevent overload
- D. Additional resistance must be added in parallel with the secondary to prevent overload

22 G6A15 Which of the following is an advantage of an electrolytic capacitor?

- A. Tight tolerance
- B. Much less leakage than any other type
- C. High capacitance for a given volume
- D. Inexpensive RF capacitor

23 G6B05 What is meant when memory is characterized as non-volatile?

- A. It is resistant to radiation damage
- B. It is resistant to high temperatures
- C. The stored information is maintained even if power is removed
- D. The stored information cannot be changed once written

24 G7A05 What portion of the AC cycle is converted to DC by a half-wave rectifier?

- A. 90 degrees
- B. 180 degrees
- C. 270 degrees
- D. 360 degrees

25 G7B03 Which of the following describes the function of a two input AND gate?

- A. Output is high when either or both inputs are low
- B. Output is high only when both inputs are high
- C. Output is low when either or both inputs are high
- D. Output is low only when both inputs are high

26 G7C02 Which circuit is used to combine signals from the carrier oscillator and speech amplifier then send the result to the filter in some single sideband phone transmitters?

- A. Discriminator
- B. Detector
- C. IF amplifier
- D. Balanced modulator

27 G8A11 What is the modulation envelope of an AM signal?

- A. The waveform created by connecting the peak values of the modulated signal
- B. The carrier frequency that contains the signal
- C. Spurious signals that envelop nearby frequencies
- D. The bandwidth of the modulated signal

28 G8B04 What is the stage in a VHF FM transmitter that generates a harmonic of a lower frequency signal to reach the desired operating frequency?

- A. Mixer
- B. Reactance modulator
- C. Pre-emphasis network
- D. Multiplier

29 G8C02 How many data bits are sent in a single PSK31 character?

- A. The number varies
- B. 5
- C. 7
- D. 8

30 G9A10 What standing wave ratio will result when connecting a 50 ohm feed line to a non-reactive load having 10 ohm impedance?

- A. 2:1
- B. 50:1
- C. 1:5
- D. 5:1

31 G9B09 Which of the following is an advantage of a horizontally polarized as compared to a vertically polarized HF antenna?

- A. Lower ground reflection losses
- B. Lower feed point impedance
- C. Shorter Radials
- D. Lower radiation resistance

32 G9C01 Which of the following would increase the bandwidth of a Yagi antenna?

- A. Larger diameter elements
- B. Closer element spacing
- C. Loading coils in series with the element
- D. Tapered-diameter elements

33 G9D09 Which of the following is an application for a Beverage antenna?

- A. Directional transmitting for low HF bands
- B. Directional receiving for low HF bands
- C. Portable direction finding at higher HF frequencies
- D. Portable direction finding at lower HF frequencies

34 G0A05 What must you do if an evaluation of your station shows RF energy radiated from your station exceeds permissible limits?

- A. Take action to prevent human exposure to the excessive RF fields
- B. File an Environmental Impact Statement (EIS-97) with the FCC
- C. Secure written permission from your neighbors to operate above the controlled MPE limits
- D. All of these choices are correct

35 G0B06 Why must the metal enclosure of every item of station equipment be grounded?

- A. It prevents a blown fuse in the event of an internal short circuit
- B. It prevents signal overload
- C. It ensures that the neutral wire is grounded
- D. It ensures that hazardous voltages cannot appear on the chassis

General 2015-2019 Quiz 5

- 1 G1A02 (B) [97.305]
- 2 G1B02 (D) [97.203(b)]
- 3 G1C09 (A) [97.305(c) and 97.307(f)(5)]
- 4 G1D04 (A) [97.509(3)(i)(c)]
- 5 G1E07 (C) [97.115(a)(2)]
- 6 G2A06 (B)
- 7 G2B09 (A) [97.407(a)]
- 8 G2C11 (D)
- 9 G2D10 (B)
- 10 G2E01 (D)
- 11 G3A05 (D)
- 12 G3B07 (A)
- 13 G3C04 (D)
- 14 G4A10 (B)
- 15 G4B04 (D)
- 16 G4C01 (B)
- 17 G4D04 (C)
- 18 G4E04 (B)
- 19 G5A08 (A)
- 20 G5B11 (B)
- 21 G5C02 (A)
- 22 G6A15(C)
- 23 G6B05 (C)
- 24 G7A05 (B)
- 25 G7B03 (B)
- 26 G7C02 (D)
- 27 G8A11 (A)
- 28 G8B04 (D)
- 29 G8C02(A)
- 30 G9A10 (D)
- 31 G9B09 (A)
- 32 G9C01 (A)
- 33 G9D09 (B)
- 34 G0A05 (A)
- 35 G0B06 (D)

General 2015-2019 Quiz 5

Frequency Band Chart:

<http://www.arrl.org/graphical-frequency-allocations>

For more information, please contact:

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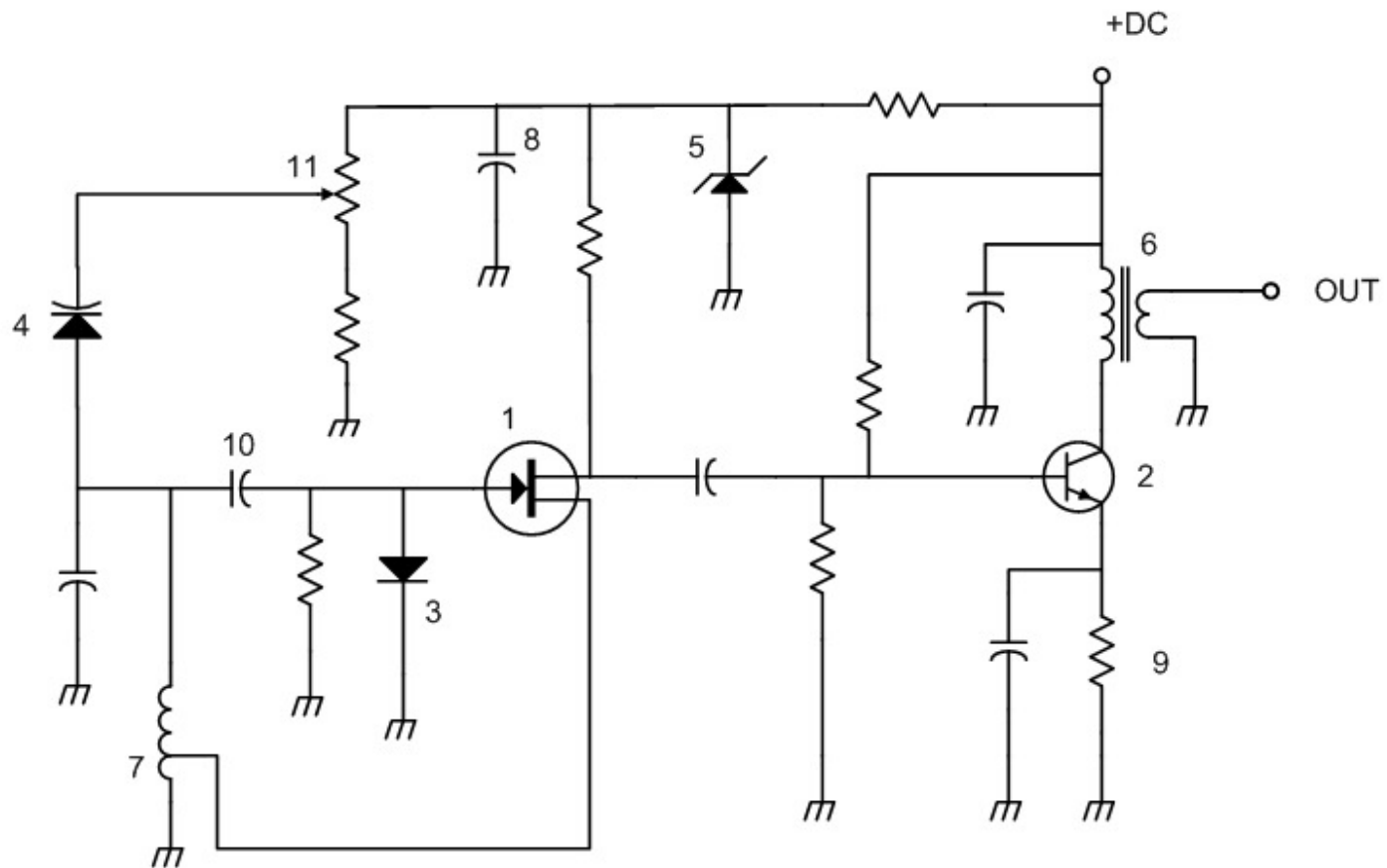


Figure G7-1