Chapter 6.0 Hamtronics
Section 6.2 Components

G5C17 (C) p.186
What is the value in nanofarads (nF) of a 22,000 pF capacitor?
A. 0.22 nF
B. 2.2 nF
C. 22 nF
D. 220 nF

G5C18 (D) p.186
What is the value in microfarads of a 4700 nanofarad (nF) capacitor?
A. 47 µF
B. 0.47 µF
C. 47,000 µF
D. 4.7 µF

G6A03 (B) p.190
What is the approximate junction threshold voltage of a germanium diode?
A. 0.1 volt
B. 0.3 volts
C. 0.7 volts
D. 1.0 volts

G6A05 (C) p.190
What is the approximate junction threshold voltage of a conventional silicon diode?
A. 0.1 volt
B. 0.3 volts
C. 0.7 volts
D. 1.0 volts

G6A06 (A) p.191
Which of the following is an advantage of using a Schottky diode in an RF switching circuit rather than a standard silicon diode?
A. Lower capacitance
B. Lower inductance
C. Longer switching times
D. Higher breakdown voltage

G6A07 (A) p.193
What are the stable operating points for a bipolar transistor used as a switch in a logic circuit?
A. Its saturation and cutoff regions
B. Its active region (between the cutoff and saturation regions)
C. Its peak and valley current points
D. Its enhancement and depletion modes

G6A08 (D) p.195
Why must the cases of some large power transistors be insulated from ground?
A. To increase the beta of the transistor
B. To improve the power dissipation capability
C. To reduce stray capacitance
D. To avoid shorting the collector or drain voltage to ground

G6A09 (B) p.194
Which of the following describes the construction of a MOSFET?
A. The gate is formed by a back-biased junction
B. The gate is separated from the channel with a thin insulating layer
C. The source is separated from the drain by a thin insulating layer
D. The source is formed by depositing metal on silicon

G6A13 (D) p.186
Why is the polarity of applied voltages important for polarized capacitors?
A. Incorrect polarity can cause the capacitor to short-circuit
B. Reverse voltages can destroy the dielectric layer of an electrolytic capacitor
C. The capacitor could overheat and explode
D. All of these choices are correct

G6A14 (D) p.185
Which of the following is an advantage of ceramic capacitors as compared to other types of capacitors?
A. Tight tolerance
B. High stability
C. High capacitance for given volume
D. Comparatively low cost

G6A15(C) p.186
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

G6A16 (C) p.181
What will happen to the resistance if the temperature of a resistor is increased?
A. It will change depending on the resistor’s reactance coefficient
B. It will stay the same
C. It will change depending on the resistor's temperature coefficient
D. It will become time dependent

G6A17 (B) p.182
Which of the following is a reason not to use wire-wound resistors in an RF circuit?
A. The resistor's tolerance value would not be adequate for such a circuit
B. The resistor's inductance could make circuit performance unpredictable
C. The resistor could overheat
D. The resistor's internal capacitance would detune the circuit

G6A18 (D) p.189
What is an advantage of using a ferrite core toroidal inductor?
A. Large values of inductance may be obtained
B. The magnetic properties of the core may be optimized for a specific range of frequencies
C. Most of the magnetic field is contained in the core
D. All of these choices are correct

G6A19 (C) p.189
How should the winding axes of two solenoid inductors be oriented to minimize their mutual inductance?
A. In line
B. Parallel to each other
C. At right angles to each other
D. Interleaved

G6B07 (D) p.191
Which of the following is an advantage of an LED indicator compared to an incandescent indicator?
A. Lower power consumption
B. Faster response time
C. Longer life
D. All of these choices are correct

G6B08 (D) p.191
How is an LED biased when emitting light?
A. Beyond cutoff
B. At the Zener voltage
C. Reverse Biased
D. Forward Biased

G7A09 (C) p.195
Which symbol in figure G7-1 represents a field effect transistor?
A. Symbol 2
B. Symbol 5
C. Symbol 1
D. Symbol 4

G7A10 (D) p.192,195
Which symbol in figure G7-1 represents a Zener diode?
A. Symbol 4
B. Symbol 1
C. Symbol 11
D. Symbol 5

G7A11 (B) p.195
Which symbol in figure G7-1 represents an NPN junction transistor?
A. Symbol 1
B. Symbol 2
C. Symbol 7
D. Symbol 11

G7A12 (C) p.195
Which symbol in Figure G7-1 represents a multiple-winding transformer?
A. Symbol 4
B. Symbol 7
C. Symbol 6
D. Symbol 1

G7A13 (A) p.188,195
Which symbol in Figure G7-1 represents a tapped inductor?
A. Symbol 7
B. Symbol 11
C. Symbol 6
D. Symbol 1