T1D11 (D) [97.119(a)]
When may an amateur station transmit without on-the-air identification?
A. When the transmissions are of a brief nature to make station adjustments
B. When the transmissions are unmodulated
C. When the transmitted power level is below 1 watt
D. When transmitting signals to control model craft

T2B06 (A)
What type of tones are used to control repeaters linked by the Internet Relay Linking Project (IRLP) protocol?
A. DTMF
B. CTCSS
C. EchoLink
D. Sub-audible

T2B07 (C)
How can you join a digital repeater’s “talk group”?
A. Register your radio with the local FCC office
B. Join the repeater owner’s club
C. Program your radio with the group’s ID or code
D. Sign your call after the courtesy tone

T2B09 (B)
What is a “talk group” on a DMR digital repeater?
A. A group of operators sharing common interests
B. A way for groups of users to share a channel at different times without being heard by other users on the channel
C. A protocol that increases the signal-to-noise ratio when multiple repeaters are linked together
D. A net that meets at a particular time

T3A10 (D)
What may occur if data signals arrive via multiple paths?
A. Transmission rates can be increased by a factor equal to the number of separate paths observed
B. Transmission rates must be decreased by a factor equal to the number of separate paths observed
C. No significant changes will occur if the signals are transmitted using FM
D. Error rates are likely to increase

T4A02 (D)
How might a computer be used as part of an amateur radio station?
A. For logging contacts and contact information
B. For sending and/or receiving CW
C. For generating and decoding digital signals
D. All of these choices are correct

T4A04 (C)
Which computer sound card port is connected to a transceiver’s headphone or speaker output for operating digital modes?
A. Headphone output
B. Mute
C. Microphone or line input
D. PCI or SDI
T4A06 (C)
Which of the following connections might be used between a voice transceiver and a computer for digital operation?
A. Receive and transmit mode, status, and location
B. Antenna and RF power
C. Receive audio, transmit audio, and push-to-talk (PTT)
D. NMEA GPS location and DC power

T4A07 (C)
How is a computer’s sound card used when conducting digital communications?
A. The sound card communicates between the computer CPU and the video display
B. The sound card records the audio frequency for video display
C. The sound card provides audio to the radio's microphone input and converts received audio to digital form
D. All of these choices are correct

T8A10 (B)
What is the typical bandwidth of analog fast-scan TV transmissions on the 70 centimeter band?
A. More than 10 MHz
B. About 6 MHz
C. About 3 MHz
D. About 1 MHz

T8C06 (B)
How is access to some IRLP nodes accomplished?
A. By obtaining a password that is sent via voice to the node
B. By using DTMF signals
C. By entering the proper internet password
D. By using CTCSS tone codes

T8C07 (D)
What is meant by Voice Over Internet Protocol (VoIP) as used in amateur radio?
A. A set of rules specifying how to identify your station when linked over the internet to another station
B. A set of guidelines for contacting DX stations during contests using internet access
C. A technique for measuring the modulation quality of a transmitter using remote sites monitored via the internet
D. A method of delivering voice communications over the internet using digital techniques

T8C08 (A)
What is the Internet Radio Linking Project (IRLP)?
A. A technique to connect amateur radio systems, such as repeaters, via the internet using Voice Over Internet Protocol (VoIP)
B. A system for providing access to websites via amateur radio
C. A system for informing amateurs in real time of the frequency of active DX stations
D. A technique for measuring signal strength of an amateur transmitter via the internet

T8C09 (D)
How might you obtain a list of active nodes that use VoIP?
A. By subscribing to an on line service
B. From on line repeater lists maintained by the local repeater frequency coordinator
C. From a repeater directory
D. All of these choices are correct
T8C10 (D)
What must be done before you may use the EchoLink system to communicate using a repeater?
A. You must complete the required EchoLink training
B. You must have purchased a license to use the EchoLink software
C. You must be sponsored by a current EchoLink user
D. You must register your call sign and provide proof of license

T8C11 (A)
What name is given to an amateur radio station that is used to connect other amateur stations to the internet?
A. A gateway
B. A repeater
C. A digipeater
D. A beacon

T8D01 (D)
Which of the following is a digital communications mode?
A. Packet radio
B. IEEE 802.11
C. JT65
D. All of these choices are correct

T8D02 (A)
What does the term “APRS” mean?
A. Automatic Packet Reporting System
B. Associated Public Radio Station
C. Auto Planning Radio Set-up
D. Advanced Polar Radio System

T8D03 (D)
Which of the following devices is used to provide data to the transmitter when sending automatic position reports from a mobile amateur radio station?
A. The vehicle speedometer
B. A WWV receiver
C. A connection to a broadcast FM sub-carrier receiver
D. A Global Positioning System receiver

T8D04 (C)
What type of transmission is indicated by the term "NTSC?"
A. A Normal Transmission mode in Static Circuit
B. A special mode for earth satellite uplink
C. An analog fast scan color TV signal
D. A frame compression scheme for TV signals

T8D05 (A)
Which of the following is an application of APRS (Automatic Packet Reporting System)?
A. Providing real-time tactical digital communications in conjunction with a map showing the locations of stations
B. Showing automatically the number of packets transmitted via PACTOR during a specific time interval
C. Providing voice over internet connection between repeaters
D. Providing information on the number of stations signed into a repeater

T8D06 (B)
What does the abbreviation "PSK" mean?
A. Pulse Shift Keying
B. Phase Shift Keying
C. Packet Short Keying
D. Phased Slide Keying
T8D07 (A)
Which of the following best describes DMR (Digital Mobile Radio)?
A. A technique for time-multiplexing two digital voice signals on a single 12.5 kHz repeater channel
B. An automatic position tracking mode for FM mobiles communicating through repeaters
C. An automatic computer logging technique for hands-off logging when communicating while operating a vehicle
D. A digital technique for transmitting on two repeater inputs simultaneously for automatic error correction

T8D08 (D)
Which of the following may be included in packet transmissions?
A. A check sum that permits error detection
B. A header that contains the call sign of the station to which the information is being sent
C. Automatic repeat request in case of error
D. All of these choices are correct

T8D09 (C)
What code is used when sending CW in the amateur bands?
A. Baudot
B. Hamming
C. International Morse
D. All of these choices are correct

T8D10 (D)
Which of the following operating activities is supported by digital mode software in the WSJT suite?
A. Moonbounce or Earth-Moon-Earth
B. Weak-signal propagation beacons
C. Meteor scatter
D. All of these choices are correct

T8D11 (C)
What is an ARQ transmission system?
A. A special transmission format limited to video signals
B. A system used to encrypt command signals to an amateur radio satellite
C. A digital scheme whereby the receiving station detects errors and sends a request to the sending station to retransmit the information
D. A method of compressing the data in a message so more information can be sent in a shorter time

T8D12 (A)
Which of the following best describes Broadband-Hamnet(TM), also referred to as a high-speed multi-media network?
A. An amateur-radio-based data network using commercial Wi-Fi gear with modified firmware
B. A wide-bandwidth digital voice mode employing DRM protocols
C. A satellite communications network using modified commercial satellite TV hardware
D. An internet linking protocol used to network repeaters

T8D13 (B)
What is FT8?
A. A wideband FM voice mode
B. A digital mode capable of operating in low signal-to-noise conditions that transmits on 15-second intervals
C. An eight channel multiplex mode for FM repeaters
D. A digital slow scan TV mode with forward error correction and automatic color compensation
What is an electronic keyer?
A. A device for switching antennas from transmit to receive
B. A device for voice activated switching from receive to transmit
C. A device that assists in manual sending of Morse code
D. An interlock to prevent unauthorized use of a radio