01-9-(b)
The holder of a General Amateur Operator Certificate of Competency may:
a retransmit public broadcasts
b transmit in bands allocated to the Amateur Service
c repair radio equipment for profit
d transmit on public service frequencies

02-0-(d)
As the holder of a New Zealand General Amateur Operator Certificate of Competency, you may operate:
a within your local Postal District
b anywhere in the world
c only at your home address
d anywhere in New Zealand and in any other country that recognises the Certificate

03-4-(c)
A logbook for recording information about stations worked:
a is compulsory for every amateur radio operator
b must list all messages sent
c is recommended for all amateur radio operators
d must record time in UTC

04-4-(d)
Your amateur station is identified by transmitting your:
a full name and address
b "handle"
c first name and location
d callsign

05-6-(d)
A General Amateur Operator Certificate of Competency is usually issued for:
a two years
b five years
c ten years
d life

06-4-(d)
The following messages from an amateur station are expressly forbidden:
a International No.2 code
b Baudot code
c ASCII
d secret cipher

07-3-(a)
A station using the callsign "VK3XYZ stroke ZL" is heard on your local VHF repeater. This is:
a the station of an overseas visitor
b a confused person, probably with a stolen transceiver
c an unauthorised callsign
d an illegal operator

08-5-(a)
In New Zealand, the "15 metre band" frequency limits are:
a 21.00 to 21.45 MHz
b 21.00 to 21.40 MHz
c 21.00 to 21.35 MHz
d 21.00 to 21.30 MHz

09-7-(a)
The following band is an exclusive primary allocation for New Zealand amateur radio operators:
a 21 to 21.45 MHz
b 10.1 to 10.15 MHz
c 146 to 148 MHz
d 3.5 to 3.9 MHz

10-5-(a)
These magnetic poles will repel:
a like
b unlike
c positive
d negative

11-3-(a)
As the temperature increases, the resistance of a conductor:
a increases
b decreases
c remains constant
d becomes negative

12-4-(d)
The watt is the unit of:
a magnetic flux
b electromagnetic field strength
c breakdown voltage
d power

13-3-(a)
I = E/R is a mathematical equation describing:
a Ohm's Law
b Thevenin's Theorem
c Kirchoff's First Law
d Kirchoff's Second Law

14-1-(a)
A circuit has a total resistance of 100 ohm and 50 volt is applied across it. The current flow will be:
a 500 mA
b 50 mA
c 2 ampere
d 20 ampere

15-5-(b)
Six identical 2-volt bulbs are connected in series. The supply voltage to cause the bulbs to light normally is:
a 1.2 V
b 12 V
c 6 V
d 2 V

16-8-(d)
Resistors of 68 ohm, 47 kilohm, 560 ohm and 10 ohm are connected in parallel. The total resistance is:
a between 68 and 560 ohm
b between 560 and 47 kilohm
c greater than 47 kilohm
d less than 10 ohm

17-8-(c)
A simple transmitter requires a 50 ohm dummy load. You can fabricate this from:
a four 300 ohm resistors in parallel
b five 300 ohm resistors in parallel
c six 300 ohm resistors in parallel
d seven 300 ohm resistors in parallel

18-4-(d)
The current in a 100 kilohm resistor is 10 mA. The power dissipated is:
a 1 watt
b 100 watt
c 10,000 watt
d 10 watt

19-4-(c)
Each of 9 resistors in a circuit is dissipating 4 watt. If the circuit operates from a 12 volt supply, the total current flowing in the circuit is:
a 48 ampere
b 36 ampere
c 3 ampere
d 9 ampere

20-5-(c)
The correct name for the equivalent of "one cycle per second" is one:
a henry
b volt
c hertz
d coulomb

21-7-(c)
The reactance of a capacitor increases as the:
a applied voltage increases
b frequency increases
c frequency decreases
d applied voltage decreases

22-3-(d)
A toroidal inductor is one in which the:
a windings are air-spaced
b windings are wound on a ferrite rod
c inductor is enclosed in a magnetic shield
d windings are wound on a closed ring of magnetic material

23-1-(d)
For your safety, before checking a fault in a mains operated power supply unit, first:
a short the leads of the filter capacitor
b check the action of the capacitor bleeder resistance
c remove and check the fuse in the power supply
d turn off the power and remove the power plug

24-3-(d)
A bipolar transistor has three terminals named:
a base, emitter and drain
b collector, base and source
c drain, source and gate
d emitter, base and collector

25-7-(c)
To bias a transistor to cut-off, the base must be:
a at the collector potential
b mid-way between collector and emitter potentials
c at the emitter potential
d mid-way between the collector and the supply potentials

26-9-(a)
A triode valve has this many grids:
a one
b two
c three
d three plus a filament

27-7-(d)
A good ammeter should have:
a a very high internal resistance
b a resistance equal to that of all other components in the circuit
c an infinite resistance
d a very low internal resistance

28-0-(b)
Assuming the same impedances, the input to an amplifier is 1 volt rms and the output 10 volt rms. This is an increase of:
a 3 dB
b 20 dB
c 6 dB
d 10 dB

29-4-(d)
In an HF station, the "linear amplifier" is:
a an amplifier to remove distortion in signals from the transceiver
b an amplifier with all components arranged in-line
c a push-pull amplifier to cancel second harmonic distortion
d an optional amplifier to be switched in when higher power is required

30-8-(c)
In a frequency modulation receiver, this is located between the frequency discriminator and the speaker and/or headphones:
a limiter
b intermediate frequency amplifier
c audio frequency amplifier
d radio frequency amplifier

31-1-(a)
In a single sideband and CW receiver, the output of this is connected to the mixer:
a the radio frequency amplifier
b the intermediate frequency amplifier
c the audio frequency amplifier
d a filter

32-7-(a)
The BFO in a superhet receiver operates on a frequency nearest to that of its:
a IF amplifier
b RF amplifier
c audio amplifier
d local oscillator

33-8-(d)
The abbreviation AGC means:
a attenuating gain capacitor
b anode-grid capacitor
c amplified grid conductance
d automatic gain control

34-4-(c)
A superhet receiver, with a 500 kHz IF, is receiving a signal at 21.0 MHz. A strong unwanted signal at 22 MHz is interfering. The cause is:
a insufficient IF selectivity
b the 22 MHz signal is out-of-band
c 22 MHz is the image frequency
d insufficient RF gain

35-3-(b)
A single conversion receiver with a 9 MHz IF has a local oscillator operating at 16 MHz. The frequency it is tuned to is:
a 16 MHz
b 7 MHz
c 21 MHz
d 9 MHz

36-2-(d)
The primary source of noise that can be heard in a UHF band receiver with its antenna connected is:
a detector noise
b atmospheric noise
c man-made noise
d receiver front-end noise

37-3-(b)
In an elementary frequency modulation transmitter, this is located between the modulator and the frequency multiplier:
a speech amplifier
b oscillator
c power amplifier
d microphone

38-8-(c)
In a single sideband transmitter, the output of this is connected to the mixer:
a radio frequency oscillator
b linear amplifier
c variable frequency oscillator
d antenna

39-1-(a)
The signal from a CW transmitter consists of:
a an RF waveform which is keyed on and off to form Morse characters
b a continuous unmodulated RF waveform
c a continuous RF waveform modulated with an 800 Hz Morse signal
d a continuous RF waveform which changes frequency in synchronism with an applied Morse signal

40-9-(b)
To minimise the radiation of one particular harmonic, one can use a:
a resistor
b wave trap in the transmitter output
c high pass filter in the transmitter output
d filter in the receiver lead

41-8-(d)
Parasitic oscillations tend to occur in:
a high voltage rectifiers
b antenna matching circuits
c SWR bridges
d high gain amplifier stages

42-2-(d)
The following unit in a DC power supply performs a smoothing operation:
a a fuse
b a crowbar
c a full-wave diode bridge
d an electrolytic capacitor

43-8-(d)
In a regulated power supply, "current limiting" is sometimes used to:
a prevent transformer core saturation
b protect the mains fuse
c eliminate earth-leakage effects
d minimise short-circuit current passing through the regulator

44-7-(a)
When conversing via a VHF or UHF repeater, you should pause between overs for about:
a 3 seconds
b half a second
c 30 seconds
d several minutes

45-5-(a)
The standard frequency offset (split) for 70 cm repeaters in New Zealand is plus or minus:
a 5 MHz
b 600 kHz
c 1 MHz
d 2 MHz

46-7-(a)
The AGC circuit is to:
a minimise the adjustments needed to the receiver gain control knobs
b expand the audio gain
c limit the extent of amplitude generation
d amplitude limit the crystal oscillator output

47-5-(b)
The "Q" signal "are you busy?" is:
a QRM?
b QRL?
c QRT?
d QRZ?

48-5-(a)
To obtain efficient transfer of power from a transmitter to an antenna, it is important that there is a:
a correct impedance match between transmitter and antenna
b high load impedance
c low load impedance
d high standing wave ratio

49-3-(a)
A quarter-wave length of 50 ohm coaxial line is shorted at one end. The impedance seen at the other end of the line is:
a infinite
b zero
c 50 ohm
d 150 ohm

50-0-(d)
The support member for the elements of a Yagi antenna is known as the:
a reflector
b driven element
c director
d boom

51-9-(b)
A half-wave antenna resonant at 7100 kHz is approximately this long:
a 40 metres
b 20 metres
c 80 metres
d 160 metres

52-3-(b)
The resonant frequency of an antenna may be increased by:
a lengthening the radiating element
b shortening the radiating element
c increasing the height of the radiating element
d lowering the radiating element

53-7-(a)
The main reason why many VHF base and mobile antennas in amateur use are 5/8 of a wavelength long is that:
a most of the energy is radiated at a low angle
b it is easy to match the antenna to the transmitter
c it is a convenient length on VHF
d the angle of radiation is high giving excellent local coverage

54-7-(b)
For long distance propagation, the radiation angle of energy from the antenna should be:
a more than 30 degrees but less than forty-five
b less than 30 degrees
c more than 45 degrees but less than ninety
d 90 degrees

55-7-(a)
A variation in received signal strength caused by slowly changing differences in path lengths is called:
a fading
b absorption
c fluctuation
d path loss

56-4-(d)
The type of atmospheric layers which will best return signals to earth are:
a oxidised layers
b heavy cloud layers
c sun spot layers
d ionised layers

57-3-(a)
Which of the following is most likely to cause broad-band continuous interference:
a poor commutation in an electric motor
b an electric blanket switch
c a refrigerator thermostat
d a microwave transmitter

58-3-(b)
To reduce harmonic output from a transmitter, the following could be put in the transmission line, as close to the transmitter as possible:
a wave trap
b low-pass filter
c high-pass filter
d band reject filter

59-7-(a)
The input impedance of an operational amplifier is generally:
a very high
b very low
c capacitive
d inductive

60-1-(a)
In amateur radio service, a "modem":
a translates digital signals to and from audio signals
b monitors the demodulated signals
c de-emphasises the modulated data
d determines the modulation protocol