01-7-(a)
An authorised officer from the Ministry of Business, Innovation & Employment can inspect a General Amateur Operator's Certificate of Competency:
a at any time
b during business hours
c at any time but not on public holidays
d at any time but not after 9 p.m.

02-4-(d)
The qualified operator of an amateur radio station is absent overseas, so the home station may be used by:
a any member of the family to maintain contact with the traveller
b the family to contact other amateur radio operators
c anyone who knows how to operate it
d any person with an appropriate General Amateur Operator Certificate of Competency

03-8-(c)
A person may hold a General Amateur Operator Certificate of Competency after reaching this minimum age:
a 18 years
b 21 years
c there is no age limit
d the age for holding a motor vehicle driver's licence

04-0-(d)
You must surrender your General Amateur Operator Certificate of Competency at the age of:
a 65 years
b 70 years
c 75 years
d there is no age limit

05-0-(c)
A person in distress:
a must avoid passing third-party traffic
b should use only the approved distress channels
c may use any available communication means to attract attention
d should quote the GPS coordinates of the current position

06-5-(a)
The expression "harmful interference" means:
a interference which obstructs or repeatedly interrupts radiocommunication services
b interference by a station in a secondary service
c a receiver with intolerably loud audio
d arcing on a nearby power pole in wet weather

07-1-(b)
A New Zealand amateur radio operator may:
a be prepared with emergency radio apparatus available on 12-hour notice
b train for and support disaster relief activities
c operate with emergency traffic-handling, using solar cells during week-end days
d use portable antennas but, only during daylight hours

08-9-(a)
The published New Zealand amateur bandplans:
a should be adhered to in the interests of all band occupants
b regularly change with daylight saving
c are to limit the operating frequencies of high-power stations
d are determined by the MBIE

09-6-(d)
The New Zealand amateur radio bandplans are:
a obligatory for all amateur radio operators
b only for testing and development purposes
c indicators of where distant stations can be worked
d recommended, all amateur radio operators should observe them

10-0-(d)
An element which acts somewhere between being an insulator and a conductor is called a:
a P-type conductor
b N-type conductor
c intrinsic conductor
d semiconductor

11-9-(b)
The name for the flow of electrons in an electric circuit is:
a voltage
b current
c resistance
d capacitance

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

13-5-(b)
A current of 2 ampere flows through a 16 ohm resistance. The applied voltage is:
a 8 volt
b 32 volt
c 14 volt
d 18 volt

14-7-(b)
The ohm is the unit of:
a supply voltage
b electrical resistance
c electrical pressure
d current flow

15-3-(a)
One way to operate a 3 volt bulb from a 9 volt supply is to connect it in:
a series with a resistor
b series with the supply
c parallel with the supply
d parallel with a resistor

16-1-(a)
The total resistance of several resistors connected in series is:
a greater than the resistance of any one resistor
b less than the resistance of any one resistor
c equal to the highest resistance present
d equal to the lowest resistance present

17-2-(d)
The smallest resistance that can be made with five 1 kilohm resistors is:
a 50 ohm by arranging them in series
b 50 ohm by arranging them in parallel
c 200 ohm by arranging them in series
d 200 ohm by arranging them in parallel

18-1-(a)
The DC input power of a transmitter operating at 12 volt and drawing 500 milliamp would be:
a 6 watt
b 12 watt
c 20 watt
d 500 watt

19-9-(d)
The voltage applied to two resistors in series is doubled. The total power dissipated will:
a decrease to half
b double
c not change
d increase by four times

20-9-(c)
A sinewave alternating current of 10 ampere peak has an rms value of:
a 5 amp
b 14.14 amp
c 7.07 amp
d 20 amp

21-0-(b)
The total capacitance of two or more capacitors in series is:
a always greater than that of the largest capacitor
b always less than that of the smallest capacitor
c found by adding each of the capacitances together
d found by adding the capacitances together and dividing by their total number

22-4-(a)
A transformer with 500 turns on the primary winding and 50 turns on the secondary winding has its primary winding connected to 230 volt AC mains. The voltage across the secondary is:
a 23 volt
b 10 volt
c 110 volt
d 2300 volt

23-4-(b)
An earth wire should be connected to the metal chassis of a mains-operated power supply, to ensure that if a fault develops, the chassis:
a does not develop a high voltage with respect to the phase lead
b does not develop a high voltage with respect to earth
c becomes a conductor to bleed away static charge
d provides a path to ground in case of lightning strikes

24-7-(d)
One important application for diodes is recovering information from transmitted signals. This is referred to as:
a biasing
b rejuvenation
c ionisation
d demodulation

25-5-(d)
The two basic types of bipolar transistors are:
a p-channel and n-channel types
b diode and triode types
c varicap and zener types
d NPN and PNP types

26-7-(b)
The electrode that is usually a cylinder of wire mesh in a thermionic valve is the:
a filament (heater)
b grid
c cathode
d anode

27-3-(d)
The following meter could be used to measure the power supply current drawn by a small hand-held transistorised receiver:
a a power meter
b an RF ammeter
c an electrostatic voltmeter
d a DC ammeter

28-3-(c)
A transmitter power amplifier has a gain of 20 dB. The ratio of the output power to the input power is:
a 10
b 20
c 100
d 40

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

30-9-(b)
In a frequency modulation receiver, this connects to the audio frequency amplifier output:
a the intermediate frequency amplifier
b the speaker and/or headphones
c the frequency discriminator
d the limiter

31-5-(a)
In a single sideband and CW receiver, this is located between the filter and product detector:
a the intermediate frequency amplifier
b the audio frequency amplifier
c the beat frequency oscillator
d the radio frequency amplifier

32-6-(d)
A receiver with high selectivity has a:
a wide bandwidth
b wide tuning range
c narrow tuning range
d narrow bandwidth

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

34-2-(d)
An audio amplifier is necessary in a receiver because:
a the carrier frequency must be replaced
b the signal requires demodulation
c RF signals are not heard by the human ear
d signals leaving the detector are weak

35-7-(b)
The BFO is off-set slightly (500 - 1500 Hz) from the incoming signal to the detector. This is required:
a to pass the signal without interruption
b to beat with the incoming signal
c to provide additional amplification
d to protect the incoming signal from interference

36-5-(b)
Front-end selectivity is provided by resonant networks both before and after the RF stage in a superhet receiver. This whole section of the receiver is often referred to as the:
a preamble
b preselector
c preamplifier
d pass-selector

37-6-(c)
In a frequency modulation transmitter, the power amplifier output is fed to the:
a frequency multiplier
b microphone
c antenna
d modulator

38-7-(a)
In a single sideband transmitter, the output of the variable frequency oscillator is connected to the:
a mixer
b antenna
c balanced modulator
d linear amplifier

39-0-(d)
The signal from a balanced modulator consists of:
a a carrier and two sidebands
b a carrier and one sideband
c no carrier and one sideband
d no carrier and two sidebands

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

41-4-(d)
A parasitic oscillation:
a is generated by parasitic elements of a Yagi beam
b does not cause any radio interference
c is produced in a transmitter oscillator stage
d is an unwanted signal developed in a transmitter

42-6-(d)
The following should always be included as a standard protection device in any power supply:
a a saturating transformer
b a zener diode bridge limiter
c a fuse in the filter capacitor negative lead
d a fuse in the mains lead

43-1-(a)
A regulator device is used in a power supply to:
a keep the output voltage at a constant value
b ensure that the output voltage never exceeds a dangerous value
c keep the incoming frequency constant at 50 Hz
d regulate the incoming mains voltage to a constant rms value

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

45-2-(c)
"Break-in keying" means:
a unauthorised entry has resulted in station equipment disappearing
b temporary emergency operating
c key-down changes the station to transmit, key-up to receive
d the other station's keying is erratic

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

47-4-(c)
The "Q" signal "what is your location?" is:
a QRZ?
b QTC?
c QTH?
d QRL?

48-2-(c)
The characteristic impedance of a 20 metre length of transmission line is 52 ohm. If 10 metres is cut off, the impedance will be:
a 13 ohm
b 26 ohm
c 52 ohm
d 39 ohm

49-7-(a)
The velocity factor of a coaxial cable with solid polythene dielectric is about:
a 0.66
b 0.1
c 0.8
d 1.0

50-5-(a)
The physical length of an antenna can be shortened but the electrical length maintained, if one of the following items is added at an appropriate point in the antenna:
a an inductor
b a capacitor
c an insulator
d a resistor

51-6-(d)
The effect of adding a series inductance to an antenna is to:
a increase the resonant frequency
b have no change on the resonant frequency
c have little effect
d decrease the resonant frequency

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

53-9-(b)
On VHF and UHF bands, polarisation of the receiving antenna is important in relation to the transmitting antenna, but on HF it is relatively unimportant because:
a the ground wave and the sky wave continually shift the polarisation
b the ionosphere can change the polarisation of the signal from moment to moment
c anomalies in the earth's magnetic field profoundly affect HF polarisation
d improved selectivity in HF receivers makes changes in polarisation redundant

54-2-(c)
The highest frequency that will be reflected back to the earth at any given time is known as the:
a UHF
b OWF
c MUF
d LUF

55-1-(b)
The layer of the ionosphere mainly responsible for long distance communication is:
a C
b F
c D
d E

56-5-(a)
The ionosphere:
a is formed from layers of ionised gases around the earth
b is a magnetised belt around the earth
c consists of magnetised particles around the earth
d is a spherical belt of solar radiation around the earth

57-4-(c)
If broadband noise interference varies when it rains, the most likely cause could be from:
a underground power cables
b car ignitions
c outside overhead power lines
d your antenna connection

58-1-(a)
Cross-modulation of a broadcast receiver by a nearby transmitter would be noticed in the receiver as:
a the undesired signal in the background of the desired signal
b a lack of signals being received
c interference only when a broadcast signal is received
d distortion on transmitted voice peaks

59-8-(c)
An active audio low-pass filter could be constructed using:
a zener diodes and resistors
b electrolytic capacitors and resistors
c an operational amplifier, resistors and capacitors
d a transformer and capacitors

60-9-(a)
The following communication mode is generally used for connecting to a VHF packet radio bulletin board:
a FM
b SSB
c AM
d DSB