01-3-(a)
The Amateur Service in New Zealand is administered through this prime document:
a   the New Zealand Radiocommunications Regulations
b   the Broadcasting Act
c   the Telecommunications Act
d   the Radio Amateur's Handbook

02-9-(a)
An application for the New Zealand General Amateur Operator Certificate of Competency and a callsign must be supported with an appropriate examination pass qualification and may be made by:
a   a citizen or a permanent resident of New Zealand, or others, after an approval from a referral to the RSM Licensing Manager
b   any visitor, but only after acquiring a New Zealand contact address
c   anyone except the representative of a foreign government
d   anyone except an employee of the MBIE

03-0-(c)
An amateur radio operator must have current mail and e-mail addresses, so the Ministry of Business, Innovation & Employment:
a   has a record of the location of every amateur station
b   can reimburse your station expenses
c   can send mail to the operator
d   can publish a callsign directory

04-1-(a)
Power output quoted as peak envelope power (PEP) is the:
a   average power output at the crest of the modulating cycle
b   total power radiated by your station
c   transmitted power in the key-up condition
d   carrier power only

05-3-(a)
A printed copy of your General Amateur Operator Certificate of Competency can be replaced by:
a   downloading and printing yours from the official database (or have an Approved Radio Examiner do this for you)
b   download an application form from the MBIE website then, complete and submit it by post
c   phone the MBIE, give your callsign and request one by post
d   report your need to the nearest Approved Radio Examiner

06-3-(b)
A secret code for the transmission of messages by the operator of an amateur station is:
a   permitted for emergency messages to be passed on to a government agency
b   not permitted except for control signals by the licensees of remote beacon or repeater stations
c   often used in amateur radio contests
d   only permitted for third-party traffic

07-2-(d)
The holder of a General Amateur Operator Certificate of Competency may:
a   service household appliances
b   operate on the citizen band with amateur station power levels
c   service commercial communication equipment above 1kW rating
d   establish and operate an earth station in the amateur satellite service

08-1-(a)
When first qualified, an amateur radio operator is permitted to:
a   work on specified bands for 3 months, log at least 50 contacts and retain the log book for at least one year for possible official inspection
b   operate on all HF bands at least weekly using a computer for log-keeping
c   operate only in the amateur bands between 5 and 25 MHz for 12 months and present the log book for official inspection
d   operate on amateur bands between 5 and 25 MHz as and when the operator chooses

09-4-(c)
The band 146 to 148 MHz is:
a   exclusive to repeater operation
b   allocated exclusively for police communications
c   shared with other communication services
d   reserved for emergency communications

10-2-(c)
In the classic model of the atom:
a   the neutrons and the electrons orbit the nucleus
b   the protons and the neutrons orbit the nucleus in opposite directions
c   the electrons orbit the nucleus
d   the protons orbit around the neutrons

11-1-(b)
This is a source of electrical energy:
a   a p-channel FET
b   an NiMH cell
c   a carbon resistor
d   a germanium diode

12-5-(a)
The voltage "two volts" is also:
a   2,000 mV
b   2,000 kV
c   2,000 uV
d   2,000 MV

13-6-(d)
A current of 5 ampere in a 50 ohm resistance produces a potential difference of:
a   20 volt
b   45 volt
c   55 volt
d   250 volt

14-0-(d)
When an 8 ohm resistor is connected across a 12 volt supply, the current flow is:
a   8 / 12 amp
b   12 - 8 amp
c   12 + 8 amp
d   12 / 8 amp

15-8-(c)
Two resistors are connected in parallel. One is 75 ohm and the other is 50 ohm. The total resistance of this parallel circuit is:
a   10 ohm
b   70 ohm
c   30 ohm
d   40 ohm

16-6-(c)
If ten resistors of equal value R are wired in parallel, the total resistance is:
a   R
b   10R
c   R/10
d   10/R

17-4-(c)
Two 100 ohm resistors connected in parallel are wired in series with a 10 ohm resistor. The total resistance of the combination is:
a   180 ohm
b   190 ohm
c   60 ohm
d   210 ohm

18-5-(a)
A current of 500 milliamp passes through a 1000 ohm resistance. The power dissipated is:
a   250 watt
b   0.25 watt
c   2.5 watt
d   25 watt

19-8-(b)
A current of 10 ampere rms at a frequency of 50 Hz flows through a 100 ohm resistor. The power dissipated is:
a   500 watt
b   10,000 watt
c   707 watt
d   50,000 watt

20-2-(b)
A 50 hertz current in a wire means that:
a   a potential difference of 50 volts exists across the wire
b   the current changes direction, 50 complete cycles in each second
c   the current flowing in the wire is 50 amperes
d   the power dissipated in the wire is 50 watts

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

22-3-(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

23-5-(d)
The purpose of using three wires in the mains power cord and plug on amateur radio equipment is to:
a   make it inconvenient to use
b   prevent the plug from being reversed in the wall outlet
c   prevent short circuits
d   prevent the chassis from becoming live in case of an internal short to the chassis

24-1-(c)
Zener diodes are normally used as:
a   RF detectors
b   AF detectors
c   voltage regulators
d   current regulators

25-9-(d)
A semiconductor device, with leads labelled gate, drain and source, is best described as a:
a   bipolar transistor
b   silicon diode
c   gated transistor
d   field-effect transistor

26-4-(d)
This component can amplify a small signal, but uses high voltages:
a   a transistor
b   an electrolytic capacitor
c   a multiple-cell battery
d   a thermionic valve

27-0-(a)
An ohmmeter measures the:
a   value of any resistance placed between its terminals
b   impedance of any component placed between its terminals
c   power factor of any inductor or capacitor placed between its terminals
d   voltage across any resistance placed between its terminals

28-5-(d)
An attenuator network has 10 volt rms applied to its input with 1 volt
rms measured at its output. The attenuation of the network is:
a   6 dB
b   10 dB
c   40 dB
d   20 dB

29-5-(a)
In an HF station, the "low pass filter" must be rated to:
a   carry the full power output from the station
b   filter out higher-frequency modulation components for maximum
intelligibility
c   filter out high-amplitude sideband components
d   emphasise low-speed Morse code output

30-0-(c)
In a frequency modulation receiver, this is connected to the input of the
radio frequency amplifier:
a   the mixer
b   the frequency discriminator
c   the antenna
d   the limiter

31-6-(c)
In a single sideband and CW receiver, the output from this is connected
to the audio frequency amplifier:
a   the high frequency oscillator
b   the beat frequency oscillator
c   the product detector
d   the intermediate frequency amplifier

32-8-(c)
To receive Morse code signals, a BFO is employed in a superhet receiver
to:
a   produce IF signals
b   beat with the local oscillator signal to produce sidebands
c   beat with the IF signal to produce an audio tone
d   produce an audio tone to beat with the IF signal

33-9-(a)
The AGC circuit in a receiver usually controls the:
a   RF and IF stages
b   audio stage
c   mixer stage
d   power supply

34-8-(c)
An advantage of a double conversion receiver is that it:
a   does not drift off frequency
b   produces a louder audio signal
c   has improved image rejection characteristics
d   is a more sensitive receiver

35-2-(c)
A multi-conversion superhet receiver is more susceptible to spurious responses than a single-conversion receiver, because of the:
a   poorer selectivity in the IF caused by the multitude of frequency changes
b   greater sensitivity introducing higher levels of RF to the receiver
c   additional oscillators and mixing frequencies involved in the design
d   AGC being forced to work harder causing the stages concerned to overload

36-8-(c)
The term for the reduction in receiver sensitivity caused by a strong signal near the received frequency is:
a   cross-modulation interference
b   squelch gain rollback
c   desensitisation
d   quieting

37-4-(d)
In an elementary frequency modulation transmitter, this is located between the oscillator and the power amplifier:
a   microphone
b   speech amplifier
c   modulator
d   frequency multiplier

38-5-(b)
In a single sideband transmitter, this is connected to the input of the speech amplifier:
a   radio frequency oscillator
b   microphone
c   filter
d   mixer

39-2-(c)
The following signal can be amplified using a non-linear amplifier:
a   SSB
b   AM
c   FM
d   DSBSC

40-4-(c)
Adjacent channel interference may be produced in the RF power amplifier of a transmitter if:
a   the modulation level is too low
b   the oscillator frequency is unstable
c   the modulation level is too high
d   modulation is applied to more than one stage

41-7-(b)
Transmitter power amplifiers can generate parasitic oscillations on:
a   the transmitter's output frequency
b   frequencies unrelated to the transmitter's output frequency
c   harmonics of the transmitter's output frequency
d   VHF frequencies only

42-0-(c)
A mains operated DC power supply:
a   converts DC from the mains into AC of the same voltage
b   is a diode-capacitor device for measuring mains power
c   converts energy from the mains into DC for operating electronic equipment
d   is a diode-choked device for measuring inductance power

43-5-(a)
A power supply is to replace a car battery to power a solid-state transceiver to 200 watt PEP output ratings. A typical expected maximum current load will be:
a   30 - 60 amp
b   6 - 8 amp
c   20 - 25 amp
d   1 - 5 amp

44-2-(d)
The accepted way to call "CQ" with a SSB transceiver is:
a   "This is ZL1XXX calling CQ CQ CQ"
b   "CQ to anyone, CQ to anyone, I am ZL1XXX"
c   "CQ CQ CQ CQ CQ this is New Zealand"
d   "CQ CQ CQ this is ZL1XXX ZL1XXX ZL1XXX"

45-8-(d)
The "S meter" on a receiver:
a   indicates where the squelch control should be set
b   indicates the standing wave ratio
c   indicates the state of the battery voltage
d   indicates relative incoming signal strengths

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

47-1-(b)
The signal "QRN" means:
a   I am busy
b   I am being troubled with static
c   are you being troubled by static?
d   I am being interfered with

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

49-0-(c)
Losses occurring on a transmission line between a transmitter and the antenna result in:
a   a SWR of 1:1
b   reflections occurring in the line
c   less RF power being radiated
d   improved transfer of RF energy to the antenna

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

51-3-(a)
A groundplane antenna emits a:
a   vertically polarised wave
b   horizontally polarised wave
c   elliptically polarised wave
d   axially polarised wave

52-0-(d)
A radio wave with a frequency of 3.8 MHz has a wavelength of:
a   78.94cm
b   7894m
c   789.4m
d   78.94m

53-5-(b)
The reflector and director(s) in a Yagi antenna are called:
a   oscillators
b   parasitic elements
c   tuning stubs
d   matching units

54-3-(b)
Solar cycles have an average length of:
a   1 year
b   11 years
c   6 years
d   3 years

55-9-(b)
The "critical frequency" is defined as the:
a   highest frequency to which your transmitter can be tuned
b   highest frequency which will be reflected back to earth at vertical incidence
c   lowest frequency which is reflected back to earth at vertical incidence
d   minimum usable frequency

56-3-(b)
Skip distance is a term associated with signals through the ionosphere.
Skip effects are due to:
a   selective fading of local signals
b   reflection and refraction from the ionosphere
c   high gain antennas being used
d   local cloud cover

57-9-(b)
Cross-modulation is usually caused by:
a   key-clicks generated at the transmitter
b   rectification of strong signals in overloaded stages
c   improper filtering in the transmitter
d   lack of receiver sensitivity and selectivity

58-2-(c)
Unwanted signals from a radio transmitter which cause harmful
interference to other users are known as:
a   rectified signals
b   re-radiation signals
c   harmonic and other spurious signals
d   reflected signals

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

60-1-(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