01-1-(b)
The International Radio Regulations are developed by the:
a United Nations
b International Telecommunication Union
c International Amateur Radio Union
d International Standards Organisation

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

03-5-(b)
Persons in your family who are unqualified cannot transmit using your amateur station if they are alone with your equipment, because they must:
a know the right frequencies and emissions required
b hold a General Amateur Operator Certificate of Competency before they are allowed to be operators
c not use your equipment without your express permission
d know the correct abbreviations and the Q-code

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

05-7-(a)
A licence that authorises a given class of radio transmitter to be used without requiring a licence in the owner's own name is known as:
a a general user radio licence
b a reciprocal licence
c a temporary licence
d an interim licence

06-1-(a)
The Morse code signal "SOS" indicates that a station is:
a in grave and imminent danger and requires immediate assistance
b reporting a shipping hazard
c about to send an important message for payment
d about to go silent

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

08-8-(d)
In New Zealand, the "70 centimetre band" frequency limits are:
a 430 to 438 MHz
b 430 to 450 MHz
c 435 to 438 MHz
d 430 to 440 MHz

09-0-(c)
Operation on the 130 to 190 kHz band requires:
a a vertical half-wave dipole antenna
b special permission to operate in hours of darkness
c power output limited to a maximum of 5 watt e.i.r.p.
d receivers and computers with sound cards

10-8-(d)
The term describing opposition to electron flow in a circuit is:
a current
b voltage
c power
d resistance

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

12-6-(c)
The unit for the potential difference between two points in a circuit is the:
a ampere
b ohm
c volt
d coulomb

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

15-9-(b)
A dry cell has an open circuit voltage of 1.5 volt. When supplying a large current, the voltage drops to 1.2 volt. This is due to the cell's:
a voltage capacity
b internal resistance
c electrolyte becoming dry
d current capacity

16-2-(c)
Five 10 ohm resistors connected in series give a total resistance of:
a 1 ohm
b 5 ohm
c 50 ohm
d 10 ohm

17-1-(b)
Two resistors are in parallel. Resistor A carries twice the current of resistor B, which means that:
a B has half the resistance of A
b A has half the resistance of B
c the voltage across A is twice that across B
d the voltage across B is twice that across B

18-0-(d)
A transmitter power amplifier requires 30 mA at 300 volt. The DC input power is:
a 300 watt
b 9000 watt
c 6 watt
d 9 watt

19-7-(c)
A resistor in a circuit becomes very hot and starts to burn. This is because the resistor is dissipating too much:
a current
b voltage
c power
d resistance

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

21-8-(b)
The reactance of an inductor increases as the:
a frequency decreases
b frequency increases
c applied voltage increases
d applied voltage decreases

22-1-(c)
Two 20 uH inductances are connected in series. The total inductance is:
a 10 uH
b 20 uH
c 40 uH
d 80 uH

23-3-(c)
A residual current device is recommended for protection in a mains power circuit because it:
a reduces electrical interference from the circuit
b removes power to the circuit when the current in the phase wire equals the current in the earth wire
c removes power to the circuit when the phase and neutral currents are not equal
d limits the power provided to the circuit

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

25-4-(b)
A semiconductor device is described as a "general purpose audio NPN device". This is a:
a triode
b bipolar transistor
c silicon diode
d field effect transistor

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

27-6-(b)
An ammeter should not be connected directly across the terminals of a 12 volt car battery because:
a no current will flow because no other components are in the circuit
b the resulting high current will probably destroy the ammeter
c the battery voltage will be too low for a measurable current to flow
d the battery voltage will be too high for a measurable current to flow

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

29-9-(a)
In an HF station, the connection between the "antenna tuner" and the "antenna feed-point" could be made with:
a 50 ohm coaxial cable
b three-wire mains power cable
c heavy hook-up wire
d an iron-cored transformer

30-7-(a)
In a frequency modulation receiver, this is located between the limiter and the audio frequency amplifier:
a the frequency discriminator
b the intermediate frequency amplifier
c the speaker and/or headphones
d the high frequency oscillator

31-0-(d)
In a single sideband and CW receiver, the antenna is connected to the:
a product detector
b high frequency oscillator
c intermediate frequency amplifier
d radio frequency amplifier

32-9-(b)
The following transmission mode is usually demodulated by a product detector:
a pulse modulation
b single sideband suppressed carrier modulation
c double sideband full carrier modulation
d frequency modulation

33-5-(a)
The mixer stage of a superhet receiver:
a produces an intermediate frequency signal
b produces spurious signals
c acts as a buffer stage
d demodulates SSB signals

34-7-(a)
A double conversion receiver usually has:
a a high-frequency IF stage followed by a much lower frequency IF stage
b only one IF stage
c poor image frequency rejection
d two IF stages and a discriminator

35-5-(a)
The mixer stage of a superheterodyne receiver is used to:
a change the frequency of the incoming signal to that of the IF
b allow a number of IF frequencies to be used
c remove image signals from the receiver
d produce an audio frequency for the speaker

36-0-(c)
The gain used in the RF amplifier stage of a receiver should be:
a as much as possible, short of self-oscillation
b determined by the amplification factor of the first IF stage
c sufficient to allow weak signals to overcome noise generated in the first mixer stage
d sufficient to keep weak signals below the noise of the first mixer stage

37-7-(b)
In a CW transmitter, the output from this is connected to the driver/buffer:
a power amplifier
b master oscillator
c telegraph key
d power supply

38-1-(b)
In a CW transmitter, this is located between the driver/buffer stage and the antenna:
a power supply
b power amplifier
c telegraph key
d master oscillator

39-5-(a)
Several stations advise that your FM simplex transmission in the "two metre" band is distorted. The cause might be that:
a the transmitter modulation deviation is too high
b your antenna is too low
c the transmitter has become unsynchronised
d your transmitter frequency split is incorrect

40-7-(a)
Harmonic frequencies are:
a at multiples of the fundamental frequency
b always lower in frequency than the fundamental frequency
c any unwanted frequency above the fundamental frequency
d any frequency causing TVI

41-5-(a)
Parasitic oscillations in a RF power amplifier can be suppressed by:
a placing suitable chokes, ferrite beads or resistors within the amplifier
b pulsing the supply voltage
c screening all input leads
d using split-stator tuning capacitors

42-1-(b)
The following unit in a DC power supply performs a rectifying operation:
a an electrolytic capacitor
b a full-wave diode bridge
c a fuse
d a crowbar

43-4-(d)
The regulator device in a power supply could consist of:
a four silicon power diodes in a regulator configuration
b two silicon power diodes and a centre-tapped transformer
c a single silicon power diode connected as a half-wave rectifier
d a three-terminal regulator chip

44-0-(c)
The correct order for callsigns in a callsign exchange at the start and end of a transmission is:
a your callsign followed by the other callsign
b your own callsign, repeated twice
c the other callsign followed by your own callsign
d the other callsign, repeated twice

45-6-(c)
You are adjusting an antenna matching unit using an SWR bridge. You should adjust for:
a maximum reflected power
b equal reflected and transmitted power
c minimum reflected power
d minimum transmitted power

46-2-(b)
"VOX" stands for:
a volume operated extension speaker
b voice operated transmit
c variable oscillator transmitter
d voice operated expander

47-7-(a)
The "Q" signal "your signals are fading" is:
a QSB
b QSO
c QSL
d QRX

48-7-(b)
An RF transmission line should be matched at the transmitter end to:
a prevent frequency drift
b transfer maximum power to the antenna
c overcome fading of the transmitted signal
d ensure that the radiated signal has the intended polarisation

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

50-4-(d)
A centre-fed dipole antenna for HF working can be made to operate on several bands, if the following item is installed at points in each leg:
a a capacitor
b an inductor
c a fuse
d a parallel-tuned trap

51-4-(c)
The impedance at the feed point of a folded dipole antenna is approximately:
a 150 ohm
b 200 ohm
c 300 ohm
d 100 ohm

52-6-(c)
A half-wave antenna is often called a:
a bi-polar
b Yagi
c dipole
d beam

53-3-(a)
A Yagi antenna is said to have a power gain over a dipole antenna for the same frequency band because:
a it concentrates the radiation in one direction
b it radiates more power than a dipole
c more powerful transmitters can use it
d it can be used for more than one band

54-0-(d)
A "skip zone" is:
a the distance between the antenna and where the refracted wave first returns to earth
b the distance between any two refracted waves
c a zone caused by lost sky waves
d the distance between the far end of the ground wave and where the refracted wave first returns to earth

55-8-(c)
VHF and UHF bands are frequently used for satellite communication because:
a the Doppler frequency change caused by satellite motion is much less than at HF
b satellites move too fast for HF waves to follow
c waves at these frequencies travel to and from the satellite relatively unaffected by the ionosphere
d the Doppler effect would cause HF waves to be shifted into the VHF and UHF bands

56-8-(d)
A "line of sight" transmission between two stations uses mainly the:
a ionosphere
b troposphere
c sky wave
d ground wave

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

58-4-(d)
To reduce energy from an HF transmitter getting into a television receiver, the following could be placed in the TV antenna lead, as close to the TV as possible:
a active filter
b low-pass filter
c band reject filter
d high-pass filter

59-9-(b)
A filter used to attenuate a very narrow band of frequencies centred on 3.6 MHz would be called:
a a band-pass filter
b a notch filter
c a high-pass filter
d a low-pass filter

60-3-(b)
The following are three digital communication modes:
a DSBSC, PACTOR, NBFM
b AMTOR, PACTOR, PSK31
c AGC, FSK, Clover
d PSK31, AFC, PSSN