

01-3

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

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

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

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 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

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

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

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

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

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

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

The voltage "two volts" is also:

- a 2,000 mV
- b 2,000 kV
- c 2,000 uV
- d 2,000 MV

13-6

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

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

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

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

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 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

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

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

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

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

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

Zener diodes are normally used as:

- a RF detectors
- b AF detectors
- c voltage regulators
- d current regulators

25-9

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The following signal can be amplified using a non-linear amplifier:

- a SSB
- b AM
- c FM
- d DSBSC

40-4

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

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

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 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

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

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

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

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

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

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

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 groundplane antenna emits a:

- a vertically polarised wave
- b horizontally polarised wave
- c elliptically polarised wave
- d axially polarised wave

52-0

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

The reflector and director(s) in a Yagi antenna are called:

- a oscillators
- b parasitic elements
- c tuning stubs
- d matching units

54-3

Solar cycles have an average length of:

- a 1 year
- b 11 years
- c 6 years
- d 3 years

55-9

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

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

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

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

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

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