

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