

01-4-(c)

The world is divided into radio regulatory regions, each with different radio spectrum allocations. New Zealand is in:

- a Region 1
- b Region 2
- c Region 3
- d Region 4

02-3-(b)

An Amateur Station is a station that is:

- a used primarily for emergency communications
- b operated by the holder of a General Amateur Operator Certificate of Competency on the amateur radio bands
- c owned and operated by a non-professional person
- d used exclusively to support communications for sporting organisations

03-4-(c)

A logbook for recording information about stations worked:

- a is compulsory for every amateur radio operator
- b must list all messages sent
- c is recommended for all amateur radio operators
- d must record time in UTC

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

05-3-(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

06-0-(d)

The expression "amateur third party communications" refers to:

- a three operators in a sequential contact
- b the legal transmission of encrypted messages
- c amateur operators passing messages for remuneration
- d messages to or on behalf of non-licensed people or organisations

07-6-(d)

The abbreviation "VHF" refers to radio spectrum between:

- a 30 kHz and 300 kHz
- b 300 kHz and 3 MHz
- c 3 MHz and 30 MHz
- d 30 MHz and 300 MHz

08-7-(b)

In New Zealand, the "2 metre band" frequency limits are:

- a 144 to 149 MHz
- b 144 to 148 MHz
- c 146 to 148 MHz
- d 144 to 150 MHz

09-7-(a)

The following band is an exclusive primary allocation for New Zealand amateur radio operators:

- a 21 to 21.45 MHz
- b 10.1 to 10.15 MHz
- c 146 to 148 MHz
- d 3.5 to 3.9 MHz

10-4-(d)

An electric current passes through a wire and produces around the wire:

- a nothing
- b an electric field
- c an electrostatic field
- d a magnetic field

11-7-(a)

Four good electrical insulators are:

- a glass, air, plastic, porcelain
- b plastic, rubber, wood, carbon
- c glass, wood, copper, porcelain
- d paper, glass, air, aluminium

12-9-(a)

The unit of resistance is the:

- a ohm
- b farad
- c watt
- d resistor

13-0-(c)

The voltage across a resistor carrying current can be calculated using the formula:

- a $E = I + R$ [voltage equals current plus resistance]
- b $E = I - R$ [voltage equals current minus resistance]
- c $E = I \times R$ [voltage equals current times resistance]
- d $E = I / R$ [voltage equals current divided by resistance]

14-7-(b)

The ohm is the unit of:

- a supply voltage
- b electrical resistance
- c electrical pressure
- d current flow

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

16-7-(b)

The total resistance of four 68 ohm resistors wired in parallel is:

- a 12 ohm
- b 17 ohm
- c 34 ohm
- d 272 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

18-4-(d)

The current in a 100 kilohm resistor is 10 mA. The power dissipated is:

- a 1 watt
- b 100 watt
- c 10,000 watt
- d 10 watt

19-5-(d)

Three 18 ohm resistors are connected in parallel across a 12 volt supply. The total power dissipation of the resistor load is:

- a 3 watt
- b 18 watt
- c 36 watt
- d 24 watt

20-6-(b)

One megahertz is equal to:

- a 0.0001 Hz
- b 1000 kHz
- c 100 kHz
- d 10 Hz

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

23-4-(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

24-6-(b)

The type of rectifier diode found most often in power supplies is:

- a lithium
- b silicon
- c germanium
- d copper oxide

25-8-(b)

The two basic types of field effect transistors are:

- a NPN and PNP
- b n-channel and p-channel
- c germanium and silicon
- d inductive and capacitive

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

27-4-(a)

When measuring the current drawn by a light bulb from a DC supply, the meter will act in circuit as:

- a a low value resistance
- b an insulator
- c a perfect conductor
- d an extra current drain

28-2-(a)

An amplifier has a gain of 40 dB. Assuming the same impedances, the ratio of the rms output voltage to the rms input voltage is:

- a 100
- b 20
- c 40
- d 400

29-1-(a)

In your HF station, this is the most useful for determining the effectiveness of the antenna system:

- a SWR bridge
- b antenna switch
- c linear amplifier
- d dummy load

30-1-(b)

In a frequency modulation receiver, this is in between the antenna and the mixer:

- a the audio frequency amplifier
- b the radio frequency amplifier
- c the high frequency oscillator
- d the intermediate frequency amplifier

31-8-(d)

In a single sideband and CW receiver, this is connected to the output of the product detector:

- a the intermediate frequency amplifier
- b the high frequency oscillator
- c the radio frequency amplifier
- d the audio frequency amplifier

32-5-(b)

The ability of a receiver to separate signals close in frequency is called its:

- a noise figure
- b selectivity
- c sensitivity
- d bandwidth

33-6-(c)

A 7 MHz signal and a 16 MHz oscillator are applied to a mixer stage. The output will contain the input frequencies and:

- a 8 and 9 MHz
- b 7 and 9 MHz
- c 9 and 23 MHz
- d 3.5 and 9 MHz

34-9-(b)

A receiver squelch circuit:

- a automatically keeps the audio output at maximum level
- b silences the receiver speaker during periods of no received signal
- c provides a noisy operating environment
- d is not suitable for pocket-size receivers

35-0-(d)

A communications receiver provides a choice of four IF bandpass filters installed in it, one at 250 Hz, one at 500 Hz, one at 2.4 kHz, and one at 6 kHz. If you were listening to a single sideband transmission, you would use:

- a 250 Hz
- b 6 kHz
- c 500 Hz
- d 2.4 kHz

36-2-(d)

The primary source of noise that can be heard in a UHF band receiver with its antenna connected is:

- a detector noise
- b atmospheric noise
- c man-made noise
- d receiver front-end noise

37-5-(a)

In an elementary frequency modulation transmitter, this is located between the frequency multiplier and the antenna:

- a power amplifier
- b modulator
- c speech amplifier
- d oscillator

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

39-7-(b)

The process of modulation allows:

- a information to be removed from a carrier
- b information to be impressed on to a carrier
- c voice and Morse code to be combined
- d none of these

40-5-(b)

Harmonics produced in an early stage of a transmitter may be reduced in a later stage by:

- a increasing the signal input to the final stage
- b using tuned circuit coupling between stages
- c using FET power amplifiers
- d using larger value coupling capacitors

41-0-(d)

Harmonics are to be avoided because they:

- a cause damage to amateur equipment
- b make your signal unreadable at other stations on that band
- c cause possible interference to other users of that band
- d cause possible interference to services using other bands

42-5-(b)

The capacitor value best suited for filtering the output of a 12 volt 1 amp DC power supply is:

- a 100 pF
- b 10,000 uF
- c 10 nF
- d 100 nF

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

44-1-(b)

The following phonetic code is correct for the callsign "ZL2KMJ":

- a zulu lima two kilowatt mac jamboree
- b zulu lima two kilo mike juliet
- c zanzibar london two kilo mike japan
- d zulu lima two kilowatt montreal japan

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

46-4-(c)

The "RIT" control on a transceiver:

- a reduces interference on the transmission
- b changes the frequency of the transmitter section without affecting the frequency of the receiver section
- c changes the frequency of the receiver section without affecting the frequency of the transmitter section
- d changes the transmitting and receiver frequencies by the same amount

47-8-(c)

The signal "QSY?" means:

- a shall I relay to ?
- b shall I increase transmitter power?
- c shall I transmit on another frequency?
- d is my signal fading?

48-8-(d)

A damaged antenna or feedline attached to the output of a transmitter will present an incorrect load resulting in:

- a the driver stage not delivering power to the final
- b the output tuned circuit breaking down
- c loss of modulation in the transmitted signal
- d excessive heating or protection shut-down in the transmitter output stage

49-2-(d)

A result of standing waves on a non-resonant transmission line is:

- a maximum transfer of energy to the antenna from the transmitter
- b perfect impedance match between transmitter and feedline
- c lack of radiation from the transmission line
- d reduced transfer of RF energy to the antenna

50-2-(c)

The shortest "active" element of a Yagi antenna is the:

- a boom
- b reflector
- c director(s)
- d driven element

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

52-0-(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

53-7-(a)

The main reason why many VHF base and mobile antennas in amateur use are $5/8$ of a wavelength long is that:

- a most of the energy is radiated at a low angle
- b it is easy to match the antenna to the transmitter
- c it is a convenient length on VHF
- d the angle of radiation is high giving excellent local coverage

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

55-7-(a)

A variation in received signal strength caused by slowly changing differences in path lengths is called:

- a fading
- b absorption
- c fluctuation
- d path loss

56-1-(a)

The MUF for a given radio path is the:

- a maximum usable frequency
- b mean of the maximum and minimum usable frequencies
- c minimum usable frequency
- d mandatory usable frequency

57-8-(c)

When someone in the neighbourhood complains of TVI, it is wise to:

- a deny all responsibility
- b immediately blame the other equipment
- c check your log to see if it coincides with your transmissions
- d inform all the other neighbours

58-9-(a)

Installing a low-pass filter between the transmitter and transmission line will:

- a permit lower frequency signals to pass to the antenna
- b permit higher frequency signals to pass to the antenna
- c ensure an SWR not exceeding 2:1
- d reduce the power output back to the legal maximum

59-4-(c)

A high-pass filter attenuates:

- a a band of frequencies in the VHF region
- b all except a band of VHF frequencies
- c low frequencies but not high frequencies
- d high frequencies but not low frequencies

60-8-(d)

"ITA2" is:

- a Morse code sent such that the baud speed is equal to the dot speed
- b a coding system identifying modulation types
- c an error correction code
- d a 5 bit alphabet used for digital communications