```
01-6-(d)
```

An Amateur Station is quoted in the regulations as a station:

- a for training new radio operators
- b using amateur equipment for commercial purposes
- c for public emergency purposes
- d in the Amateur Service

## 02-5-(a)

Regardless of the mode of transmission used, all amateur stations must be equipped with:

- a a reliable means for determining the operating radio frequency
- b an overmodulation indicator
- c a dummy antenna
- d a power output meter

### 03-7-(a)

Anyone may be permitted by the qualified operator of an amateur radio station to:

- a pass brief comments of a personal nature, provided no fees or other considerations are requested or accepted
- b operate the station when the operator is called away
- c send business traffic to any other station
- d broadcast a music programme

#### 04-5-(a)

This callsign could be that allocated to a New Zealand amateur radio operator:

- a ZL2KMJ
- b ZK-CFK
- c ZM4432
- d ZLGA

#### 05-5-(b)

- A General Amateur Operator Certificate of Competency:
- a expires after 12 months
- b contains the unique callsign(s) to be used by that operator
- c is transferable to any member of the family
- d gives licence for the transmission of radio waves

## 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

### 07-6-(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

```
08-0-(d)
Amateur stations are often described as being "frequency agile". This
means:
    operation is restricted to frequency modulation only
    operators can operate anywhere on a shared band
    a bandswitch is required on all transmitters
    operators can change frequency on a shared band to avoid interfering
09-6-(d)
The New Zealand amateur radio bandplans are:
    obligatory for all amateur radio operators
    only for testing and development purposes
b
    indicators of where distant stations can be worked
С
    recommended, all amateur radio operators should observe them
d
10-8-(d)
The term describing opposition to electron flow in a circuit is:
   current
  voltage
b
c power
d resistance
11-7-(a)
Four good electrical insulators are:
   glass, air, plastic, porcelain
   plastic, rubber, wood, carbon
  glass, wood, copper, porcelain
   paper, glass, air, aluminium
12-5-(a)
The voltage "two volts" is also:
   2,000 mV
b 2,000 kV
c 2,000 uV
d 2,000 MV
13-4-(c)
The voltage to cause a current of 4.4 ampere to flow in a 50 ohm
resistance is:
a 2220 volt
b 22.0 volt
c 220 volt
d 0.222 volt
14-3-(b)
A resistor with 10 volt applied across it and passing a current of 1 mA
has a value of:
a
   10 ohm
b 10 kilohm
c 100 ohm
d 1 kilohm
```

```
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:
    10 ohm
   70 ohm
b
   30 ohm
С
    40 ohm
16-0-(d)
A 6 ohm resistor is connected in parallel with a 30 ohm resistor. The
total resistance of the combination is:
    24 ohm
b
   35 ohm
С
d
    5 ohm
17-1-(b)
Two resistors are in parallel. Resistor A carries twice the current of
resistor B, which means that:
   B has half the resistance of A
   A has half the resistance of B
    the voltage across A is twice that across B
    the voltage across B is twice that across B
18-3-(b)
When two 1000 ohm 5 watt resistors are connected in parallel, they can
dissipate a maximum total power of:
    40 watt
a
b
   10 watt
c 20 watt
d
    5 watt
19-3-(a)
If two 10 ohm resistors are connected in series with a 10 volt battery,
the battery load is:
   5 watt
b 10 watt
   20 watt
С
d
   100 watt
20-8-(a)
The "rms voltage" of a sinewave signal is:
    0.707 times the peak voltage
   half the peak voltage
    1.414 times the peak voltage
    the peak-to-peak voltage
21-3-(c)
Two metal plates separated by air form a 0.001 uF capacitor. Its value
may be changed to 0.002 uF by:
  making the plates smaller in size
b moving the plates apart
  bringing the metal plates closer together
d touching the two plates together
```

```
22-1-(c)
Two 20 uH inductances are connected in series. The total inductance is:
b 20 uH
c 40 uH
d 80 uH
23-8-(b)
The correct colour coding for the earth wire in a flexible mains lead is:
  brown
  yellow and green
b
С
   blue
d white
24-4-(a)
The three leads from a PNP transistor are named the:
   collector, emitter, base
   collector, source, drain
   gate, source, drain
d drain, base, source
25-0-(b)
A varactor diode acts like a variable:
  resistance
b capacitance
C
   voltage regulator
d
   inductance
26-2-(c)
This semiconductor device has characteristics most similar to a triode
   junction diode
а
b zener diode
   field effect transistor
d bipolar transistor
27-3-(d)
The following meter could be used to measure the power supply current
drawn by a small hand-held transistorised receiver:
  a power meter
  an RF ammeter
  an electrostatic voltmeter
d a DC ammeter
Assuming the same impedances, the input to an amplifier is 1 volt rms and
the output 10 volt rms. This is an increase of:
   3 dB
  20 dB
b
C
   6 dB
d 10 dB
```

### 29-7-(b)

In an HF station, the connection between the SWR bridge and the switch used for selecting between multiple antennas, is normally a:

- a twisted pair cable
- b coaxial cable
- c quarter-wave matching section
- d short length of balanced ladder-line

#### 30-3-(a)

In a frequency modulation receiver, the output of this is connected to the mixer:

- a the high frequency oscillator
- b the frequency discriminator
- c the intermediate frequency amplifier
- d the speaker and/or headphones

#### 31-7-(b)

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

- a the mixer
- b the beat frequency oscillator
- c the radio frequency amplifier
- d the audio frequency amplifier

### 32-4-(c)

If two receivers are compared, the more sensitive receiver will produce:

- a more than one signal
- b less signal and more noise
- c more signal and less noise
- d a steady oscillator drift

#### 33-0-(d)

This audio shaping network is added at an FM receiver to restore proportionally attenuated lower audio frequencies:

- a a pre-emphasis network
- b an audio prescaler
- c a heterodyne suppressor
- d a de-emphasis network

## 34-0-(c)

The tuning control of a superhet receiver changes the tuned frequency of the:

- a audio amplifier
- b IF amplifier
- c local oscillator
- d post-detector amplifier

### 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

```
36-5-(b)
Front-end selectivity is provided by resonant networks both before and
after the RF stage in a superhet receiver. This whole section of the
receiver is often referred to as the:
a preamble
b preselector
c preamplifier
d pass-selector
37-1-(a)
In a frequency modulation transmitter, the microphone is connected to
  speech amplifier
a
b modulator
c power amplifier
d oscillator
38-9-(b)
In an single sideband transmitter, this is located between the mixer and
the antenna:
a variable frequency oscillator
b linear amplifier
c balanced modulator
d radio frequency oscillator
39-6-(c)
The difference between DC input power and RF power output of a
transmitter RF amplifier:
    radiates from the antenna
b is lost in the feedline
c is dissipated as heat
    is due to oscillating current
40-7-(a)
Harmonic frequencies are:
    at multiples of the fundamental frequency
b
    always lower in frequency than the fundamental frequency
    any unwanted frequency above the fundamental frequency
C
    any frequency causing TVI
41-0-(d)
Harmonics are to be avoided because they:
    cause damage to amateur equipment
    make your signal unreadable at other stations on that band
    cause possible interference to other users of that band
    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

```
43-0-(d)
A filter is used in a power supply to:
    filter RF radiation from the output of the power supply
   restore voltage variations
c act as a 50 Hz tuned circuit
    smooth the rectified waveform from the rectifier
When conversing via a VHF or UHF repeater, you should pause between overs
for about:
    3 seconds
   half a second
b
c 30 seconds
d several minutes
45-4-(d)
The standard frequency offset (split) for 2 metre repeaters in New
Zealand is:
   plus 600 kHz below 147 MHz, minus 600 kHz on or above 147 MHz
  minus 5 MHz below 147 MHz, plus 5 MHz kHz on or above 147 MHz
c plus 5 MHz below 147 MHz, minus 5 MHz kHz on or above 147 MHz
d plus 600 kHz above 147 MHz, minus 600 kHz on or below 147 MHz
46-8-(c)
Many receivers have both RF and AF gain controls. These allow the
operator to:
a vary the receiver frequency and AM transmitter frequency
independently
b vary the low and high frequency audio gain independently
  vary the gain of the radio frequency and audio frequency amplifier
stages independently
   vary the receiver's "real" and "absolute" frequencies independently
47-4-(c)
The "Q" signal "what is your location?" is:
   QRZ?
b QTC?
    QTH?
C
d
   QRL?
48-7-(b)
An RF transmission line should be matched at the transmitter end to:
   prevent frequency drift
    transfer maximum power to the antenna
    overcome fading of the transmitted signal
    ensure that the radiated signal has the intended polarisation
49-5-(b)
An instrument to check whether RF power in the transmission line is
transferred to the antenna is:
a an antenna tuner
  a standing wave ratio meter
  a dummy load
```

d a keying monitor

# 50-9-(a)Radio wave polarisation is defined by the orientation of the radiated: electric field b magnetic field c inductive field d capacitive field 51-9-(b) A half-wave antenna resonant at 7100 kHz is approximately this long: 40 metres 20 metres С 80 metres d 160 metres 52-1-(a) A half-wave antenna cut for 7 MHz can be used on this band without change: 15 metre b 10 metre С 20 metre d 80 metre 53-4-(c)The maximum radiation from a three element Yaqi antenna is: in the direction of the reflector end of the boom at right angles to the boom in the direction of the director end of the boom parallel to the line of the coaxial feeder 54-5-(a)That portion of HF radiation which is directly affected by the surface of the earth is called: ground wave local field wave

55-7-(a)

b

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

- fading
- b absorption

inverted wave ionospheric wave

- fluctuation С
- path loss

### 56-7-(b)

VHF or UHF signals transmitted towards a tall building are often received at a more distant point in another direction because:

- these waves are easily bent by the ionosphere
- these waves are easily reflected by objects in their path
- you can never tell in which direction a wave is travelling
- tall buildings have elevators

d modulator/demodulator

```
57-1-(b)
On an amateur receiver, unwanted signals are found at every 15.625 kHz.
This is probably due to:
a a low-frequency government station
b radiation from a nearby TV line oscillator
c a remote radar station
d none of these
58-6-(c)
A band-pass filter will:
   pass frequencies each side of a band
   attenuate low frequencies but not high frequencies
b
c attenuate frequencies each side of a band
    attenuate high frequencies but not low frequencies
59-1-(b)
Television interference caused by harmonics radiated from an amateur
transmitter could be eliminated by fitting:
    a low-pass filter in the TV receiver antenna input
    a low-pass filter in the transmitter output
    a high-pass filter in the transmitter output
    a band-pass filter to the speech amplifier
60-0-(d)
A "modem" is a:
  modulation de-emphasis unit
   Morse demodulator
c MOSFET de-emphasis unit
```