01-0-(c)

A brief definition for the Amateur Service is:

- a a private radio service intended only for emergency communications
- b a public radio service used for public service communications
- c a radiocommunication service for the purpose of self-training,

intercommunication and technical investigation

d a radio service for personal gain and public benefit

02-1-(a)

As the holder of a General Amateur Operator Certificate of Competency, you may operate transmitters in your station:

- a any number at one time
- b only one at any time except in emergencies
- c one at a time
- d any number but must be on different bands

03-0-(c)

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

04-0-(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

05-8-(c)

A General Amateur Operator Certificate of Competency holder may permit any other person to:

- a take part in amateur radio communication
- b operate that operator's home station
- $\ensuremath{\mathtt{c}}$ pass brief messages of a personal nature, provided no fees or other consideration are requested or accepted
- d to work on radio repairs under their supervision

06-7-(b)

Amateur radio operators may knowingly interfere with other radio communications or signals:

- a when tuning up a transmitting system
- b never
- c when another station already occupies your proposed transmitting frequency
- d if resulting interference is going to be inevitable

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07-1-(b)
A New Zealand amateur radio operator may:
   be prepared with emergency radio apparatus available on 12-hour
notice
   train for and support disaster relief activities
   operate with emergency traffic-handling, using solar cells during
week-end days
d use portable antennas but, only during daylight hours
In New Zealand, the "20 metre band" frequency limits are:
    14.00 to 14.20 MHz
  14.00 to 14.25 MHz
   14.00 to 14.30 MHz
   14.00 to 14.35 MHz
09-8-(c)
When the Amateur Service is a secondary user of a band and another
service is the primary user, this means:
   nothing at all, because all services have equal rights to operate
  amateurs may only use the band during declared emergencies
   the band may be used by amateurs provided harmful interference is not
caused to other services
   you may increase transmitter power to overcome any interference
10-1-(a)
Silicon, as used in diodes and transistors, has been doped to become:
    a semiconductor
b a superconductor
c a conductor
d an insulator
11-0-(c)
The plastic coating around wire is:
a a conductor
b an inductor
c an insulator
d a magnet
12-5-(a)
The voltage "two volts" is also:
a 2,000 mV
b 2,000 kV
c 2,000 uV
d 2,000 MV
13-1-(b)
A current of 10 mA is measured in a 500 ohm resistor. The voltage across
the resistor will be:
a 50 volt
b 5 volt
c 500 volt
d 5000 volt
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14-1-(a)
A circuit has a total resistance of 100 ohm and 50 volt is applied across
it. The current flow will be:
    500 mA
    50 mA
C
    2 ampere
   20 ampere
15-4-(c)
You can operate this greatest number of identical lamps, each drawing a
current of 250 mA, from a 5A supply:
    30
h
    20
С
d
    5
16-5-(a)
If a 2.2 megohm and a 100 kilohm resistor are connected in series, the
total resistance is:
   2.3 megohm
b 2.1 megohm
   2.11 megohm
  2.21 megohm
17-3-(a)
The following combination of 28 ohm resistors has a total resistance of
    a combination of two resistors in parallel, then placed in series
with another resistor
    a combination of two resistors in parallel, then placed in series
with another two in parallel
    three resistors in series
    three resistors in parallel
A current of 500 milliamp passes through a 1000 ohm resistance. The power
dissipated is:
   250 watt
   0.25 watt
b
    2.5 watt
d
  25 watt
19-0-(c)
The following two quantities should be multiplied together to find power:
   resistance and capacitance
   voltage and inductance
    voltage and current
    inductance and capacitance
20-4-(a)
An impure signal is found to have 2 kHz and 4 kHz components. This 4 kHz
signal is:
```

a harmonic of the 2 kHz signal a fundamental of the 2 kHz signal

the DC component of the main signal

a sub-harmonic of 2 kHz

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21-9-(d)
Increasing the number of turns on an inductor will make its inductance:
    decrease
  remain unchanged
  become resistive
C
d
   increase
22-6-(b)
An inductor and a capacitor are connected in parallel. At the resonant
frequency, the resulting impedance is:
  minimum
h
  maximum
   totally reactive
C
   totally inductive
23-8-(b)
The correct colour coding for the earth wire in a flexible mains lead is:
   brown
  yellow and green
c blue
d white
24-9-(c)
The following material is considered to be a semiconductor:
a copper
b sulphur
c silicon
d
   tantalum
25-7-(c)
To bias a transistor to cut-off, the base must be:
    at the collector potential
   mid-way between collector and emitter potentials
   at the emitter potential
C
   mid-way between the collector and the supply potentials
26-9-(a)
A triode valve has this many grids:
    one
b
    two
С
    three
    three plus a filament
27-6-(b)
An ammeter should not be connected directly across the terminals of a 12
volt car battery because:
    no current will flow because no other components are in the circuit
    the resulting high current will probably destroy the ammeter
    the battery voltage will be too low for a measurable current to flow
    the battery voltage will be too high for a measurable current to flow
```

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28-5-(d)
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:
    10 dB
b
    40 dB
C
    20 dB
d
29-4-(d)
In an HF station, the "linear amplifier" is:
    an amplifier to remove distortion in signals from the transceiver
    an amplifier with all components arranged in-line
    a push-pull amplifier to cancel second harmonic distortion
    an optional amplifier to be switched in when higher power is required
30-9-(b)
In a frequency modulation receiver, this connects to the audio frequency
amplifier output:
    the intermediate frequency amplifier
    the speaker and/or headphones
    the frequency discriminator
С
d
    the limiter
31-9-(a)
In a single sideband and CW receiver, this is connected to the output of
the audio frequency amplifier:
   the speaker and/or headphones
    the mixer
b
    the radio frequency amplifier
C
    the beat frequency oscillator
32-2-(d)
Of two receivers, the one capable of receiving the weakest signal will
have:
   an RF gain control
а
b
   the loudest audio output
    the greatest tuning range
C
    the least internally generated noise
33-9-(a)
The AGC circuit in a receiver usually controls the:
a RF and IF stages
b audio stage
c mixer stage
d power supply
34-1-(b)
A superhet receiver, with an IF at 500 kHz, is receiving a 14 MHz signal.
The local oscillator frequency is:
    19 MHz
   14.5 MHz
b
c 500 kHz
    28 MHz
d
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35-1-(a)
In a communications receiver, a highly-selective filter would be located
in the:
    IF circuits
b
   local oscillator
   audio output stage
   detector
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
37-9-(a)
In a CW transmitter, this is located between the master oscillator and
the power amplifier:
a driver/buffer
b audio amplifier
c power supply
   telegraph key
38-8-(c)
In a single sideband transmitter, the output of this is connected to the
mixer:
a radio frequency oscillator
b linear amplifier
   variable frequency oscillator
   antenna
39-5-(a)
Several stations advise that your FM simplex transmission in the "two
metre" band is distorted. The cause might be that:
    the transmitter modulation deviation is too high
    your antenna is too low
    the transmitter has become unsynchronised
С
    your transmitter frequency split is incorrect
A harmonic of a signal transmitted at 3525 kHz would be expected to occur
at:
    3573 kHz
a
b 21050 kHz
   7050 kHz
С
d 14025 kHz
41-0-(d)
Harmonics are to be avoided because they:
    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

cause possible interference to services using other bands

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42-3-(a)
The following could power a solid-state 10 watt VHF transceiver:
    a 12 volt car battery
    6 penlite cells in series
   a 12 volt, 500 mA plug-pack
   a 6 volt 10 amp-hour gel cell
43-2-(c)
A transformer is used in a power supply to:
    transform the incoming mains AC voltage to a DC voltage
    ensure that any RF radiation cannot get into the power supply
    transform the mains AC voltage to a more convenient AC voltage
    transform the mains AC waveform into a higher frequency waveform
44-3-(a)
A signal report of "5 and 1" indicates:
   perfect intelligibility but very low signal strength
b very low intelligibility but good signal strength
c perfect intelligibility, high signal strength
d medium intelligibility and signal strength
45-9-(a)
The "National System" is:
   a series of nationwide amateur radio linked repeaters in the 70 cm
band
    the legal licensing standard of Amateur operation in New Zealand
    the official New Zealand repeater band plan
    a nationwide emergency communications procedure
46-2-(b)
"VOX" stands for:
  volume operated extension speaker
   voice operated transmit
   variable oscillator transmitter
d voice operated expander
47-6-(d)
The "Q" signal "shall I decrease transmitter power?" is:
   QRL?
    QRZ?
b
    QRN?
    QRP?
48-0-(d)
Any length of transmission line may be made to appear as an infinitely
long line by:
    shorting the line at the end
    leaving the line open at the end
    increasing the standing wave ratio above unity
    terminating the line in its characteristic impedance
49-7-(a)
The velocity factor of a coaxial cable with solid polythene dielectric is
about:
a
    0.66
   0.1
b
  0.8
С
d 1.0
```

50-0-(d)

The support member for the elements of a Yagi antenna is known as the:

- a reflector
- b driven element
- c director
- d boom

51-2-(d)

An antenna which transmits equally well in all compass directions is a:

- a dipole with a reflector only
- b dipole with director only
- c half-wave horizontal dipole
- d quarter-wave grounded vertical

52-9-(a)

A vertical antenna which uses a flat conductive surface at its base is the:

- a quarter-wave ground plane
- b vertical dipole
- c rhombic
- d long wire

53-9-(b)

On VHF and UHF bands, polarisation of the receiving antenna is important in relation to the transmitting antenna, but on HF it is relatively unimportant because:

- a the ground wave and the sky wave continually shift the polarisation
- b the ionosphere can change the polarisation of the signal from moment to moment
- c anomalies in the earth's magnetic field profoundly affect HF polarisation
- d improved selectivity in HF receivers makes changes in polarisation redundant

54-2-(c)

The highest frequency that will be reflected back to the earth at any given time is known as the:

- a UHF
- b OWF
- c MUF
- d LUF

55-6-(d)

The distance from the transmitter to the nearest point where the sky wave returns to the earth is called the:

- a angle of radiation
- b maximum usable frequency
- c skip zone
- d skip distance

56-3-(b)

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-(b)

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

58-1-(a)

Cross-modulation of a broadcast receiver by a nearby transmitter would be noticed in the receiver as:

- a the undesired signal in the background of the desired signal
- b a lack of signals being received
- c interference only when a broadcast signal is received
- d distortion on transmitted voice peaks

59-7-(a)

The input impedance of an operational amplifier is generally:

- a very high
- b very low
- c capacitive
- d inductive

60-7-(b)

The letters BBS stand for:

- a binary baud system
- b bulletin board system
- c basic binary selector
- d broadcast band stopper