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

02-1-(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

03-4-(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

06-9-(a)
The Morse code is permitted for use by:
a any amateur radio operator
b only amateurs who own a vintage Morse key and for transmission only
c anyone for emergency traffic only
d anyone with headphones for reception only

07-9-(b)
A General Amateur Operator Certificate of Competency:
a has a limited life-time
b does not confer on its holder a monopoly on the use of any frequency or band
c is transferable to your descendants
d provides a waiver over copyright

08-3-(b)
In New Zealand, the "40 metre band" frequency limits are:
a 7.10 to 7.20 MHz
b 7.00 to 7.30 MHz
c 7.00 to 7.35 MHz
d 7.00 to 7.40 MHz

09-8-(c)
When the Amateur Service is a secondary user of a band and another service is the primary user, this means:
a nothing at all, because all services have equal rights to operate
b amateurs may only use the band during declared emergencies
c the band may be used by amateurs provided harmful interference is not caused to other services
d you may increase transmitter power to overcome any interference

10-2-(c)
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

11-6-(d)
An electrical insulator:
a lets electricity flow through it in one direction
b lets electricity flow through it
c lets electricity flow through it when light shines on it
d does not let electricity flow through it

12-0-(d)
The unit of impedance is the:
a farad
b ampere
c henry
d ohm

13-5-(b)
A current of 2 ampere flows through a 16 ohm resistance. The applied voltage is:
a 8 volt
b 32 volt
c 14 volt
d 18 volt

14-1-(a)
A circuit has a total resistance of 100 ohm and 50 volt is applied across it. The current flow will be:
a 500 mA
b 50 mA
c 2 ampere
d 20 ampere

15-0-(c)
The total resistance in a parallel circuit:
a depends upon the voltage drop across each branch
b could be equal to the resistance of one branch
c is always less than the smallest branch resistance
d depends upon the applied voltage

16-6-(c)
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

17-3-(a)
The following combination of 28 ohm resistors has a total resistance of 42 ohm:
a a combination of two resistors in parallel, then placed in series with another resistor
b a combination of two resistors in parallel, then placed in series with another two in parallel
c three resistors in series
d three resistors in parallel

18-3-(b)
When two 1000 ohm 5 watt resistors are connected in parallel, they can dissipate a maximum total power of:
a 40 watt
b 10 watt
c 20 watt
d 5 watt

19-1-(b)
The following two electrical units multiplied together give the unit "watt":
a volt and farad
b volt and ampere
c farad and henry
d ampere and henry

20-8-(a)
The "rms voltage" of a sinewave signal is:
a 0.707 times the peak voltage
b half the peak voltage
c 1.414 times the peak voltage
d 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:
a making the plates smaller in size
b moving the plates apart
c bringing the metal plates closer together
d touching the two plates together

22-4-(a)
A transformer with 500 turns on the primary winding and 50 turns on the secondary winding has its primary winding connected to 230 volt AC mains. The voltage across the secondary is:
a 23 volt
b 10 volt
c 110 volt
d 2300 volt

23-6-(a)
The correct colour coding for the phase wire in a flexible mains lead is:
a brown
b blue
c yellow and green
d white

24-5-(c)
A low-level signal is applied to a transistor circuit input and a higher-level signal is present at the output. This effect is known as:
a detection
b modulation
c amplification
d rectification

25-7-(c)
To bias a transistor to cut-off, the base must be:
a at the collector potential
b mid-way between collector and emitter potentials
c at the emitter potential
d mid-way between the collector and the supply potentials

26-2-(c)
This semiconductor device has characteristics most similar to a triode valve:
a junction diode
b zener diode
c field effect transistor
d bipolar transistor

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

28-1-(d)
The input to an amplifier is 1 volt rms and output 100 volt rms. Assuming the same impedances, this is an increase of:
a 10 dB
b 20 dB
c 100 dB
d 40 dB

29-4-(d)
In an HF station, the "linear amplifier" is:
a an amplifier to remove distortion in signals from the transceiver
b an amplifier with all components arranged in-line
c a push-pull amplifier to cancel second harmonic distortion
d an optional amplifier to be switched in when higher power is required

30-2-(d)
In a frequency modulation receiver, the output of the high frequency oscillator is fed to the:
a radio frequency amplifier
b limiter
c antenna
d mixer

31-2-(c)
In a single sideband and CW receiver, this is connected to the radio frequency amplifier and the high frequency oscillator:
a the beat frequency oscillator
b the product detector
c the mixer
d a filter

32-2-(d)
Of two receivers, the one capable of receiving the weakest signal will have:
a an RF gain control
b the loudest audio output
c the greatest tuning range
d the least internally generated noise

33-1-(a)
A stage in a receiver with input and output circuits tuned to the received frequency is the:
a RF amplifier
b local oscillator
c audio frequency amplifier
d detector

34-1-(b)
A superhet receiver, with an IF at 500 kHz, is receiving a 14 MHz signal. The local oscillator frequency is:
a 19 MHz
b 14.5 MHz
c 500 kHz
d 28 MHz

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

36-8-(c)
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

37-9-(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
d telegraph key

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

39-8-(d)
The output power rating of a linear amplifier in a SSB transmitter is specified by the:
a peak DC input power
b mean AC input power
c unmodulated carrier power
d peak envelope power

40-1-(b)
The third harmonic of 7 MHz is:
a 10 MHz
b 21 MHz
c 14 MHz
d 28 MHz

41-1-(a)
Parasitic oscillations are to be avoided because:
a they cause possible interference to other users of the radio frequency spectrum
b they do not radiate very far
c some cannot be adequately controlled
d they do not always follow your modulation

42-2-(d)
The following unit in a DC power supply performs a smoothing operation:
a a fuse
b a crowbar
c a full-wave diode bridge
d an electrolytic capacitor

43-9-(a)
The purpose of a series pass transistor in a regulated power supply is to:
a maintain the output voltage at a constant value
b work as a surge multiplier to speed up regulation
c amplify output voltage errors to assist regulation
d suppress voltage spikes across the transformer secondary winding

44-2-(d)
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"

45-0-(d)
You are mobile and talking through a VHF repeater. The other station reports that you keep "dropping out". This means:
a your signal is drifting lower in frequency
b your voice is too low-pitched to be understood
c you are not speaking loudly enough
d your signal does not have enough strength to operate the repeater

46-3-(a)
"RIT" stands for:
a receiver incremental tuning
b receiver interference transmuter
c range independent transmission
d random interference tester

47-2-(d)
The "Q signal" requesting the other station to send slower Morse code is:
a QRL
b QRN
c QRM
d QRS

48-9-(a)
A result of mismatch between the power amplifier of a transmitter and the antenna is:
a reduced antenna radiation
b radiation of key clicks
c lower modulation percentage
d smaller DC current drain

49-6-(d)
This type of transmission line will exhibit the lowest loss:
a twisted flex
b coaxial cable
c mains cable
d open-wire feeder

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

51-2-(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

52-1-(a)
A half-wave antenna cut for 7 MHz can be used on this band without change:
a 15 metre
b 10 metre
c 20 metre
d 80 metre

53-8-(c)
A more important consideration when selecting an antenna for working stations at great distances is:
a sunspot activity
b impedance
c angle of radiation
d bandwidth

54-5-(a)
That portion of HF radiation which is directly affected by the surface of the earth is called:
a ground wave
b local field wave
c inverted wave
d ionospheric wave

55-2-(d)
One of the ionospheric layers splits into two parts during the day and are called the:
a A & B
b D1 & D2
c E1 & E2
d F1 & F2

56-5-(a)
The ionosphere:
a is formed from layers of ionised gases around the earth
b is a magnetised belt around the earth
c consists of magnetised particles around the earth
d is a spherical belt of solar radiation around the earth

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

58-5-(a)
A low-pass filter, used to eliminate the radiation of unwanted signals, is connected to the:
a output of the amateur transmitter
b output of the balanced modulator
c input of the stereo system
d input of the mixer stage of your SSB transmitter

59-7-(a)
The input impedance of an operational amplifier is generally:
a very high
b very low
c capacitive
d inductive

60-9-(a)
The following communication mode is generally used for connecting to a VHF packet radio bulletin board:
a FM
b SSB
c AM
d DSB