

## **Annex 1**

### **Subjects covered by the ability exams for amateur categories nos. 1, 2 and 3 (paragraph 2 of Part II-B of “Procedures approved by ICP – ANACOM”)**

According to paragraph 2 of Part II-B of the “Procedures”, the subjects covered in the ability exams for amateur categories nos. 1, 2 and 3 are presented in the table below:

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
<b>PART A – Technical content</b>				
<b>1</b>	<b>ELECTRICAL, ELECTRO-MAGNETIC AND RADIO THEORY</b>			
<b>1.1</b>	<b>Conductivity</b>			(see note 1)
a)	Conductor, semi-conductor and insulator			X
b)	Current (I), voltage (V) and resistance (R)			X
c)	The units Ampere (A), Volt (V) and Ohm ( $\Omega$ )			X
d)	Ohm's Law [ $V = R \cdot I$ ]			X
e)	Kirchhoff's Laws	X		
f)	Electric power [ $P = V \cdot I$ ]			X
g)	The unit Watt (W)			X
h)	Electric energy [ $W = P \cdot t$ ]		X	
i)	The capacity of a battery [Ampere-hour – A-h]		X	
<b>1.2</b>	<b>Sources of electricity</b>			
a)	Voltage source, electromotive force [emf], short circuit current, internal resistance and terminal voltage		X	
b)	Series and parallel connection of voltage sources		X	
<b>1.3</b>	<b>Electric field</b>			
a)	Electric field strength (E)		X	
b)	The unit Volt/metre (V/m)		X	
c)	Shielding of electric fields	X		
<b>1.4</b>	<b>Magnetic field</b>			
a)	Magnetic field surrounding live conductor		X	
b)	Shielding of magnetic fields	X		
<b>1.5</b>	<b>Electromagnetic field</b>			(ver nota 2)
a)	Radio waves as electromagnetic waves			X
b)	Propagation velocity [ $v$ ] and its relation with frequency [ $f$ ] [ $v = f \cdot \lambda$ ] and wavelength [ $\lambda$ ]			X
c)	Polarization		X	
<b>1.6</b>	<b>Sinusoidal signals</b>			
a)	Graphic representation in time			X
b)	Instantaneous value, average value, amplitude [ $U_{max}$ ] and effective value (rms – root mean square) [ $U_{eff}$ ] [ $U_{eff} = \frac{U_{max}}{\sqrt{2}}$ ]			X
c)	Period (T)		X	
d)	Frequency (f)		X	
e)	The unit Hertz (Hz)		X	
f)	Phase relation	X		
<b>1.7</b>	<b>Non-sinusoidal signals</b>			
a)	Audio signals		X	
b)	Square wave		X	
c)	Graphic representation in time		X	
d)	Continuous component, fundamental frequency and harmonics		X	
e)	Noise (receiver thermal noise, band noise), noise density, noise power in receiver bandwidth [ $P_N = kTB$ ]	X		
<b>Note 1</b> - Candidates to a Category 3 exam must have a general understanding of the International System of Units, most used symbols and electrical circuits.				
<b>Note 2</b> - As points a) and b) of this sub-chapter are concerned, knowledge required from candidates to a Category 3 exam is very basic and less detailed than that required from candidates to a Category 2 exam.				

**PART A – Technical content (continuation)**

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
<b>1</b>	<b>ELECTRICAL, ELECTRO-MAGNETIC AND RADIO THEORY (continuation)</b>			
<b>1.8</b>	<b>Modulated signals</b>			
a)	Continuous Wave (CW)		X	
b)	Amplitude Modulation (AM)		X	
c)	Phase Modulation, Frequency Modulation (FM) and Single-SideBand (SSB) Modulation		X	
d)	Frequency deviation and modulation index $\left[ m = \frac{\Delta F}{f_{mod}} \right]$		X	
e)	Carrier, sidebands and bandwidth		X	
f)	Waveforms of CW, AM, SSB and FM signals (graphical presentation)		X	
g)	Spectrum of CW, AM, and SSB signals (graphical presentation)		X	
h)	Advantages and drawbacks of the different types of analogue modulation		X	
i)	Digital modulations: FSK, 2-PSK, 4-PSK, QAM (Frequency Shift etc)	X		
j)	Digital modulation: bit rate, symbol rate (Baud rate) and bandwidth	X		
k)	CRC (Cyclic Redundancy Check) and retransmissions (such as packet radio), error-correcting codes (such as Amtor, FEC – Forward Error Correction)	X		
<b>1.9</b>	<b>Power and energy</b>			
a)	Power of sinusoidal signals $\left[ P = i^2 \cdot R; P = \frac{u^2}{R}; u = U_{eff}; i = I_{eff} \right]$		X	
b)	Power ratios corresponding to the following dB values: 0dB, 3 dB, 6 dB, 10 dB and 20 dB [positive and negative]		X	
c)	The input/output power ratio in dB of series-connected amplifiers and/or attenuators		X	
d)	Matching [maximum transmit power]		X	
e)	Relation between power input/output and efficiency $\left[ \eta = \frac{P_{uit}}{P_{in}} \cdot 100\% \right]$		X	
f)	Peak envelope power [p.e.p.]		X	
<b>1.10</b>	<b>Discrete systems and signals</b>			
a)	Sampling and quantization	X		
b)	Minimum sampling rate (Nyquist frequency)	X		
c)	Convolution (in the time domain and in the frequency domain, graphical presentation)	X		
d)	Anti-aliasing filtering and reconstruction filtering	X		
e)	Analogue-to-digital converter and digital-to-analogue converter	X		
<b>2</b>	<b>COMPONENTS</b>			
<b>2.1</b>	<b>Resistor</b>			
a)	Resistance			X
b)	The unit Ohm			X
c)	Colour code			X
d)	Current–voltage characteristic		X	
e)	Power dissipation			X
f)	Series and parallel associations of resistors		X	
<b>PART A – Technical content (continuation)</b>				
<b>2</b>	<b>COMPONENTS (continuation)</b>			

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
<b>2.2</b>	<b>Capacitor</b>			
a)	Capacitance		X	
b)	The unit Farad		X	
c)	Use of fixed and variable capacitors: air, mica, plastic, ceramic and electrolytic capacitors		X	
d)	Relation between capacitance, dimensions and dielectric (qualitative treatment only)	X		
e)	Reactance $\left[ X_c = \frac{1}{2\pi f \cdot C} \right]$	X		
f)	Phase relation between voltage and current	X		
<b>2.3</b>	<b>Coil</b>			
a)	Self-inductance		X	
b)	The unit Henry		X	
c)	The effect of the number of turns, diameter, length and core material on inductance (qualitative treatment only)	X		
d)	Reactance $[X_L = 2\pi f \cdot L]$	X		
e)	Phase relation between current and voltage	X		
f)	The quality factor -Q	X		
<b>2.4</b>	<b>Transformers - applications and use</b>			
a)	Applications and use of transformers		X	
b)	Ideal transformer $[P_{prim} = P_{sec}]$	X		
c)	Relation between transformation ratio and voltage ratio $\left[ \frac{u_{sec}}{u_{prim}} = \frac{n_{sec}}{n_{prim}} \right]$ current ratio $\left[ \frac{i_{sec}}{i_{prim}} = \frac{n_{prim}}{n_{sec}} \right]$	X		
d)	Impedance ratio (qualitative treatment only)	X		
e)	Types of transformers		X	
<b>2.5</b>	<b>Diode</b>			
a)	Applications and use of diodes		X	
b)	Rectifier diode and Zener diode		X	
c)	Light-emitting diode (LED) and voltage-variable capacitor [varicap]	X		
d)	Reverse voltage and leakage current	X		
<b>2.6</b>	<b>Transistor</b>			
a)	The transistor as an amplifier and as an oscillator		X	
b)	PNP and NPN transistors		X	
c)	Amplification factors		X	
d)	Field-effect transistor vs. bipolar transistor (voltage vs. current driven)	X		
e)	The transistor in - common emitter circuit [source] - common base circuit [gate] - common collector circuit [drain]	X		
f)	Input and output impedance of above-mentioned circuits	X		

**PART A – Technical content (continuation)**

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
<b>2</b>	<b>COMPONENTS (continuation)</b>			
<b>2.7</b>	<b>Others</b>			
<b>a)</b>	Thermionic valve		X	
<b>b)</b>	Voltages and impedances in high power valve stages, impedance transformation	X		
<b>c)</b>	Simple integrated circuits (OPERACIONAL AMPLIFIER – OP-AMP)	X		
<b>d)</b>	Functioning of tuned circuits in series and in parallel		X	
<b>3.</b>	<b>CIRCUITS</b>			
<b>3.1</b>	<b>Association of components</b>			
<b>a)</b>	Series and parallel circuits of resistors, coils, capacitors, transformers and diodes	X		
<b>b)</b>	Currents and voltage in these circuits	X		
<b>c)</b>	Behaviour of real (non ideal) resistors, capacitors and coils at high frequencies	X		
<b>3.2</b>	<b>Filter</b>			
<b>a)</b>	Use and application of low-pass filters, high-pass filters, band-pass filters and band-reject filters		X	
<b>b)</b>	Tuned circuits: series and parallel	X		
<b>c)</b>	Impedance	X		
<b>d)</b>	Frequency characteristics	X		
<b>e)</b>	Resonance frequency $\left[ f = \frac{1}{2\pi f \sqrt{LC}} \right]$	X		
<b>f)</b>	Quality factor of a tuned circuit $\left[ Q = \frac{2\pi f \cdot L}{R_s}; Q = \frac{R_p}{2\pi f \cdot L}; Q = \frac{f_{res}}{B} \right]$	X		
<b>g)</b>	Bandwidth	X		
<b>h)</b>	Band-pass filter	X		
<b>i)</b>	Passive filters – low-pass, high-pass, band-pass and band-reject filters	X		
<b>j)</b>	Frequency response	X		
<b>k)</b>	Π and T filters	X		
<b>l)</b>	Quartz crystal	X		
<b>m)</b>	Effects due to non-ideal components	X		
<b>n)</b>	Digital filters (see items 1.10 and 3.8)	X		
<b>3.3</b>	<b>Power supply</b>			
<b>a)</b>	Half-wave and full-wave rectifiers and bridge rectifier		X	
<b>b)</b>	Alternating current filter circuit		X	
<b>c)</b>	Low-voltage stabilization circuits	X		
<b>d)</b>	Switching mode power supply, isolation and electromagnetic compatibility (EMC)	X		
<b>3.4</b>	<b>Amplifier</b>			
<b>a)</b>	Low- and high-frequency amplifiers		X	
<b>b)</b>	Gain		X	
<b>c)</b>	Amplitude-Frequency characteristic and bandwidth (broadband vs. tuned stages)	X		
<b>d)</b>	Amplification classes, - A, A/B, B and C	X		
<b>e)</b>	Harmonic and intermodulation distortion, overdriving amplifier stages	X		
<b>PART A - Technical content (continuation)</b>				
<b>3.</b>	<b>CIRCUITS (continuation)</b>			
<b>3.5</b>	<b>Detector</b>			

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
a)	Amplitude-modulation detector (envelope detector)	X		
b)	Diode detector	X		
c)	Product detector and beat oscillator	X		
d)	Frequency-modulation detector	X		
<b>3.6 Oscillator</b>				
a)	Feedback (self and spontaneous oscillation)	X		
b)	Factors that affect the frequency and frequency stability, conditions for oscillation	X		
c)	LC oscillator	X		
d)	Crystal oscillator, overtone	X		
e)	Voltage-controlled oscillator (VCO)	X		
f)	Phase noise	X		
<b>3.7 Phase Locked Loop (PLL)</b>				
a)	Locked loop with phase comparison circuit	X		
b)	Frequency synthesis with a programmable divider in the feedback loop	X		
<b>3.8 Digital signal processing</b>				
a)	Filter topology: FIR and IIR	X		
b)	Fourier transform (DFT, FFT, graphical presentation)	X		
c)	Direct Digital Synthesis (DDS)	X		
<b>4. RECEIVERS</b>				(see note 3)
<b>4.1 Types</b>				
a)	Single and double superheterodyne receivers		X	
b)	Direct-conversion receivers		X	
<b>4.2 Block diagrams</b>				
a)	CW receiver [A1A]		X	
b)	AM receiver [A3E]		X	
c)	SSB receiver with suppressed carrier [J3E]		X	
d)	FM receiver [F3E]		X	
<b>4.3 Operation and function of the different stages (block diagram treatment only)</b>				
a)	HF (High Frequency) amplifier – [with fixed or tuned band-pass filter]		X	
b)	Oscillator (fixed and variable), including BFO - Beat Frequency Oscillator		X	
c)	Mixer		X	
d)	Intermediate frequency amplifier		X	
e)	Limiter	X		
f)	Detector, including product detector		X	
g)	Audio amplifier		X	
h)	Automatic gain control	X		
i)	Level indicator (S units)		X	
j)	Squelch		X	
k)	Power supply		X	
<b>Note 3 -</b> As this chapter is concerned, candidates to a Category 3 exam must have elementary knowledge of single receiver block diagrams and of detectors. Moreover, at an operational level, they must also be familiar with the receiver-user interface (such as the on-off and band switch buttons, frequency tuning, volume, level display, microphone gain).				
<b>PART A - Technical subjects (continuation)</b>				
<b>4. RECEIVERS (continuation)</b>				
<b>4.4 Characteristics of receivers</b>				
a)	Adjacent channel	X		

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
b)	Selectivity	X		
c)	Sensitivity, receiver noise and noise figure	X		
d)	Stability	X		
e)	Image frequency	X		
f)	Desensitization / Blocking	X		
g)	Intermodulation; cross modulation	X		
h)	Phase noise (reciprocal mixing)	X		
5.	<b>TRANSMITTERS</b>			(see note 4)
5.1	<b>Types</b>			
a)	Transmitter with or without frequency translation	X		
5.2	<b>Block diagram</b>			
a)	CW transmitter [A1A]		X	
b)	SSB transmitter with suppressed carrier [J3E]		X	
c)	FM transmitter, with an audio signal modulating the voltage-controlled oscillator (VCO) of the Phase Locked Loop (PLL) [F3E]		X	
5.3	<b>Operation and function of the different stages (block diagram treatment only)</b>			
a)	Mixer		X	
b)	Oscillator		X	
c)	Buffer		X	
d)	Driver		X	
e)	Frequency multiplier		X	
f)	Power amplifier		X	
g)	Output matching	X		
h)	Output filter		X	
i)	Frequency modulator		X	
j)	Single sideband modulator		X	
k)	Phase modulator	X		
l)	Crystal filter	X		
m)	Power supply		X	
5.4	<b>Characteristics of transmitters (simple description)</b>			
a)	Frequency stability		X	
b)	Bandwidth		X	
c)	Sidebands		X	
d)	Range of audio frequencies		X	
e)	Non-linearity (harmonic and intermodulation distortion)	X		
f)	Output impedance		X	
g)	Output power		X	
h)	Efficiency	X		
i)	Frequency deviation	X		
j)	Modulation index	X		
<b>Note 4 -</b> As this chapter is concerned, candidates to a Category 3 exam must have good knowledge of single transmitter block diagrams and of the most common types of analogue modulation. Moreover, at an operational level, they must also be familiar with the transmitter-user interface (such as the on-off and band switch buttons, frequency tuning, volume, level display, microphone gain).				

<b>PART A - Technical subjects (continuation)</b>				
5.	<b>TRANSMITTERS (continuation)</b>			
5.4	<b>Characteristics of transmitters (continuation)</b>			

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
k)	CW manipulation noise	X		
l)	SSB overmodulation and agreed splatter	X		
m)	Spurious and harmonic radiation		X	
n)	Spurious radiations (agreed)	X		
o)	Cabinet radiation	X		
p)	Phase noise	X		
<b>6</b>	<b>ANTENNAS AND TRANSMISSION LINES</b>			(see note 5)
<b>6.1</b>	<b>Antenna types</b>			
a)	Centre fed half-wave antenna		X	
b)	End fed half-wave antenna		X	
c)	Folded dipole	X		
d)	Quarter-wave vertical antenna (ground plane)		X	
e)	Multi-elements antenna (YAGI type)		X	
f)	Aperture antennas (parabolic reflector, horn)	X		
g)	Trap dipole	X		
<b>6.2</b>	<b>Antenna characteristics</b>			
a)	Distribution of the current and voltage	X		
b)	Impedance at the feed point	X		
c)	Capacitive or inductive impedance of a non-resonant antenna	X		
d)	Polarization	X		
e)	Antenna directivity, efficiency and gain	X		
f)	Capture area	X		
g)	Radiated power (e.r.p., e.i.r.p.)		X	
h)	Front-to-back ratio		X	
i)	Horizontal and vertical radiation diagrams		X	
<b>6.3</b>	<b>Transmission lines</b>			
a)	Parallel conductor line and coaxial cable. Advantages and drawbacks. Construction and use.		X	
b)	Waveguide	X		
c)	Characteristic impedance [Z <sub>0</sub> ]		X	
d)	Velocity factor	X		
e)	Standing-wave ratio		X	
f)	Losses		X	
g)	Balun	X		
h)	Antenna tuning circuits (usage purpose only)		X	
i)	Antenna tuning circuits (II and T configurations only)	X		
<b>Note 5</b> - As this chapter is concerned, candidates to a Category 3 exam must have general knowledge of the most used types of antennas and transmission lines (namely coaxial cables); the concept and relevance of impedance matching; the concept of VSWR, its measurement and how to match an antenna to a transmitter-receiver using specific matching circuits. Knowledge on radiated power ((e.r.p., e.i.r.p.) and on the use of artificial charges will also be required.				
<b>PART A - Technical subjects (continuation)</b>				
<b>7.</b>	<b>PROPAGATION</b>			(see note 6)
a)	Signal attenuation, signal to noise ratio	X		
b)	Line of sight propagation (free space propagation, inverse square law)	X		
c)	Ionospheric layers		X	
d)	Effect of ionospheric layers on short wave propagation		X	
e)	Critical frequency	X		
f)	Influence of the sun on the ionosphere and on communications		X	
g)	Maximum Usable Frequency (MUF)	X		
h)	Ground wave and sky wave, angle of radiation and skip distance	X		

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
i)	Multipath in ionospheric propagation	X		
j)	Fading		X	
k)	Troposphere (ducting, scattering)		X	
l)	Influence of weather conditions on VHF and UHF propagation		X	
m)	Ratio between frequency and wavelength		X	
n)	Use of the different frequency ranges (HF, VHF and UHF)		X	
o)	Influence of the height of antennas on the distance that can be covered [radio horizon]	X		
p)	Temperature inversion	X		
q)	Sporadic E-reflection	X		
r)	Auroral scattering	X		
s)	Meteor scatter	X		
t)	Reflections from the moon	X		
u)	Atmospheric noise (thunderstorms)	X		
v)	Galactic noise	X		
w)	Ground noise (thermal noise)	X		
x)	Propagation prediction basics (link budget) - dominant noise source (band noise vs. receiver noise) - minimum signal to noise ratio - minimum received signal power - path loss - antenna gains, transmission line losses - minimum transmitter power	X		
<b>8.</b>	<b>MEASUREMENTS</b>			
<b>8.1</b>	<b>Making measurements</b>			
a)	Continuous and alternating voltages and currents		X	
b)	Errors in measurements of continuous and alternating voltages and currents - Influence of frequency - Influence of waveform - Influence of internal resistance of meters	X		
c)	Resistance		X	
d)	DC and RF power (average power, peak envelope power)		X	
e)	Voltage Standing-Wave Ratio (VSWR)		X	
<b>Note 6 -</b> As this chapter is concerned, candidates to a Category 3 exam must have elementary knowledge of how electromagnetic waves propagate, namely through free space, and of ionospheric propagation. They must also be familiar with how the different frequency ranges match with the different types of communications (long, medium and short distance) and how propagation conditions vary over time, for a given frequency range.				
<b>PART A - Technical subjects (continuation)</b>				
<b>8.</b>	<b>MEASUREMENTS (continuation)</b>			
<b>8.1</b>	<b>Making measurements (continuation)</b>			
f)	Waveform of the envelope of an RF signal	X		
g)	Frequency		X	
h)	Resonant frequency	X		
<b>8.2</b>	<b>Measuring instruments</b>			
a)	Multi range meter (digital and analogue)		X	
b)	RF power meter	X		
c)	Reflectometer bridge (VSWR meter)		X	
d)	Absorption wave meter		X	
e)	Signal generator	X		
f)	Frequency counter		X	
g)	Oscilloscope	X		

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
h)	Spectrum Analyzer	X		
i)	Use of artificial charges		X	
<b>9. INTERFERENCE AND IMMUNITY</b>				
<b>9.1 Interference in electronic equipment</b>				
a)	Blocking	X		
b)	Interference with the desired signal		X	
c)	Intermodulation	X		
d)	Detection in audio circuits		X	
<b>9.2 Causes of interference in electronic equipment</b>				
a)	Field strength of the transmitter and relation with radiated power			X
b)	Spurious radiation of the transmitter (parasitic radiation, harmonics) and types of transmission			X
c)	Undesired influence on the equipment: - via the antenna input (aerial voltage, input selectivity) - via other connected lines - by direct radiation			X
<b>9.3 Measures to prevent, minimize and eliminate interference</b>				
a)	Filtering (at station or equipment level)			X
b)	Decoupling			X
c)	Appropriate earthing			X
d)	Appropriate antenna and antenna positioning			X
e)	Shielding			X
f)	Separating transmission antennas and reception antennas, especially analogue television antennas (potential interference victims)			X
g)	Minimizing radiated power			X
h)	Avoiding the use of end fed antennas			X
<b>9.4 Social issues</b>				
a)	Need to avoid creating interference			X
b)	Help in case of interference			X
<b>10. SAFETY</b>				
a)	The human body and accidents that can occur. Consequences of an electrical shock, cautions to be taken.			X
b)	Sector energy (phase, neutral and earth – colour code) and relevance of an appropriate earthing. Protection systems, specially circuit breakers and fuses - slow-blow and fast-blow (fuse ratings). Battery power supply.			X
<b>PART A - Technical subjects (continuation)</b>				
<b>10. SAFETY (continuation)</b>				
c)	High voltages and charged currents and capacitors			X
d)	Location and installation of antennas			X
e)	Lightning. Associated dangers, means of protection and need for properly earthed equipment			X
<b>PART B - National and International Operating Rules and Procedures</b>				
<b>1. PHONETIC ALPHABET</b>				
	A = Alpha B = Bravo C = Charlie D = Delta E = Echo F = Foxtrot	N = November O = Oscar P = Papa Q = Quebec R = Romeo S = Sierra		X

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
G = Golf H = Hotel I = India J = Juliett K = Kilo L = Lima M = Mike	T = Tango U = Uniform V = Victor W = Whiskey X = X-ray Y = Yankee Z = Zulu			
<b>2. Q-CODE</b>				
<b>COD - Question</b>	<b>Answer</b>			
QRK - What is the readability of my signal?	The readability of your signal is ...			
QRM - Are you being interfered with?	I am being interfered with by...			
QRN - Are you troubled by airborne sound?	Airborne sound			
QRO - Shall I increase transmitter power?	Increase transmitter power			
QRP - Shall I decrease transmitter power?	Decrease transmitter power			
QRS - Shall I send more slowly?	Send more slowly			X
QRT - Shall I stop sending?	Stop sending			
QRZ - Who is calling me?	You are being called by ...			
QRV - Are you ready?	I am ready			
QSB - Are my signals fading?	Your signals are fading			
QSL - Can you acknowledge receipt?	I am acknowledging receipt			
QSO - Can you communicate with ... direct?	I can communicate with ... direct			
QSY - Shall I change to transmission on another frequency?	Change transmission to another frequency			

Detailed description of exam subjects		Cat. 1	Cat. 2	Cat. 3
	QRX - When will you call again? I will call you again at ... hours			
	QTH - What is your position in latitude and longitude (or according to any other indication)? My position is ... latitude, ... longitude (or according to any other indication)			
<b>PART B - National and International Operating Rules and Procedures (continuation)</b>				
<b>3.</b>	<b>OPERATIONAL ABBREVIATIONS</b>			
	BK - Signal used to interrupt a transmission in progress CQ - General call to all stations CW - Continuous wave DE - From (used to separate the call sign of the station called from that of the calling station) K - Invitation to transmit MSG- Message PSE - Please RST - Readability, signal-strength, tone-report R - Received RX - Receiver TX - Transmitter UR - Your			X
<b>4.</b>	<b>INTERNATIONAL DISTRESS SIGNS, EMERGENCY TRAFFIC AND NATURAL DISASTER COMMUNICATION</b>			
	Distress signs - radiotelegraph ...---... [SOS] - radiotelephone "MAYDAY" - International use of the amateur station in the event of national disasters - Frequency bands allocated to the amateur service and amateur satellite service			X
<b>5.</b>	<b>CALL SIGNS</b>			
<b>a)</b>	Identification of the amateur station			X
<b>b)</b>	Use of call signs			X
<b>c)</b>	Composition of call signs			X
<b>d)</b>	National prefixes			X
<b>6.</b>	<b>IARU (International Amateur Radio Union) BAND PLANS</b>			
<b>a)</b>	IARU band plans			X
<b>b)</b>	Purposes and interpretation of plans			X
<b>7.</b>	<b>OPERATION</b>			
<b>7.1</b>	<b>Social responsibility of radio amateur operation</b>			
	<ul style="list-style-type: none"> <li>▪ Obligation to comply with applicable legislation</li> <li>▪ Requirement for a proper and cooperative behaviour towards other radio amateurs and society in general</li> <li>▪ To use stations without creating harmful interference and to guarantee safety conditions of one's own stations</li> <li>▪ The need for international cooperation in the use of spectrum</li> </ul>			X
<b>7.2</b>	<b>Operating procedures</b>			
	Being capable of establishing national and international contacts (where necessary by resorting to provisions in chapters 1, 2 and 3 of Part B); of tuning stations in USB and LSB; of using FM equipment; of operating through repeater stations			X

Detailed description of exam subjects	Cat. 1	Cat. 2	Cat. 3
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<b>PART C - National and international regulations relevant to the amateur service and amateur satellite service</b>			
<b>1</b>	<b>ITU (International Telecommunication Union) RADIO REGULATIONS</b>		
a)	Definition of Amateur Service and Amateur Satellite Service		X
b)	Definition of amateur station		X
c)	Article 25 of the Radio Regulations		X
d)	Status of the Amateur Service and the Amateur Satellite Service		X
e)	ITU Radio Regions		X
<b>2</b>	<b>CEPT (<i>Conférence Européenne des Postes et Télécommunications</i>) REGULATIONS</b>		
a)	Recommendation T/R 61-01	X	
b)	Recommendation ECC REC(05)06		X
c)	Temporary use of amateur stations in CEPT countries		X
d)	Temporary use of amateur stations in non-CEPT countries which participate in the T/R 61-01 system	X	
e)	Temporary use of amateur stations in NON-CEPT countries which participate in the ECC REC(05)06 system		X
<b>3</b>	<b>NATIONAL LAWS, REGULATIONS AND LICENCE CONDITIONS</b>		
a)	National laws, NFAP – National Frequency Allocation Plan, and other ways of using the spectrum		X
b)	Regulations, licence and usage conditions		X
c)	Demonstration of knowledge of maintaining a station log		X
d)	Station log: purpose, data record and log keeping		X