



**SYLLABUS AND DETAILS OF WRITTEN TEST & INTERVIEW FOR THE AWARD
OF AMATEUR WIRELESS LICENSE**

Every applicant, if otherwise exempted by PTA, shall have to pass a written test and interview conducted by PTA.

1. The written test shall consist of two parts as follows:
 - a. Technical knowledge - Elementary Electricity, Magnetism, Radio Theory and practice.
 - b. Operational Knowledge.
 - i. Amateur Wireless License SOP available on the website www.pta.gov.pk
 - ii. Knowledge of ITU Radio Regulations related to Amateur Service.
 - iii. International 'Q' code, Phonetic Alphabets and other Abbreviations.
 - iv. Morse Code - Receiving and Sending conventions.

2. DETAILED SYLLABUS.

a. Technical Knowledge.

Elementary Electricity, Magnetism.

Basic theory of electrical terms, static charge, electric current (AC & DC), conductors, insulators, ohms law, amperes, watts, inductance, capacitance, their definitions, unit of measurements and their use in Radio Technology.

Elementary Radio Theory.

Audio/Radio Frequency Bands, resonance (series & parallel), Audio and Radio Frequency transformer, circuit diagram of Radio Receiver and Transmitter (both valve type as well as using solid state devices), receiver characteristics like sensitivity, selectivity, tone, cross modulation interference, squelch, signal to noise ratio, beat frequency oscillator and the distribution of Radio Frequency Spectrum. Similarly in case of transmitter, types of oscillator, different modes of modulation and transmission, radio wave propagation. Ground waves, ionospheric layers, sky waves, skip zone and fading. Type and kind of Antennae, their construction and characteristics. Measuring Instruments generally used by Amateurs for testing the performance of Receiver, Transmitter and Antenna. Elementary Theory of Space Communication.

b. Operational Knowledge.

Pakistan Telecom Authority (PTA), PARS, International Telecom Union (ITU), International Amateur Radio Union (IARU) and other Countries Amateur Societies - Basic Knowledge about their locations and functions. Basic Knowledge of the Pakistan Amateur Service Regulations, 2004, International Radio Regulations pertaining to Amateur Radio Service, its various aspects of operation like allocation of frequency bands, Call Signs, interference, distress/emergency transmissions including International Time signals and Frequency Standard Signals. The 'Q' code about twenty (20) items should be memorized. Similarly International Phonetic Alphabets, numbers and other abbreviations should be remembered as given below:-

"Q" code - QRA, QRG, QRH, QRJ, QRK, QRL, QRM, QRN, QRS, QRT, QRV, QRX, QRZ, QSB, QSL, QSO, QSP, QSY, QTH, QTR etc

Phonetic Alphabets such as:-

A..... ALFA B.....BRAVO C.....CHARLIE
D..... DELTA E.....ECHO F.....FOXTROT
etc.

3. Test and Interview:

In addition to the written test an applicant shall have to appear before the representative of PTA for general interview.

4. General

- a. The prescribed written test from Syllabus shall be conducted at PTA HQs or Zonal Offices on the dates notified to the applicant on receipt of written test fee of Rs. 100/- payment shall be made in the form of Demand Draft, pay order only in the name of "Pakistan Telecommunication Authority".
- b. The applicants having university degree/diploma from a recognized university in electrical, electronics and communications shall be exempted from the technical part of the written test. Similarly persons with long experience in professional communication services shall also be exempted. But they will have to answer the question about the operational aspects of the Amateur Radio Services.