= Amateur Station Operator 's Certificate =

Amateur Station Operator 's Certificate or ASOC is the examination that needs to be passed to receive an amateur radio licence in India . The exam is conducted by the Wireless and Planning and Coordination Wing (WPC) of the Ministry of the Ministry of Communications and Information Technology . The examination is held in various cities in India on monthly or quarterly basis depending on the size of the city . The licence may be awarded to an individual or a club station operated by a group of licensed amateur radio operators .

The first amateur radio operator was licensed in 1921 during the British rule . Partly due to low awareness among the general population and prohibitive equipment costs , the number of licensed amateur radio operators remained low for several decades . In 1970 , there were less than a thousand operators ; by 1980 , the number had risen to 1 @,@ 500 . In 2000 , there were 10 @,@ 000 operators and as of 2007 , there are more than 17 @,@ 000 licensed users in India .

= = History = =

= = Licence categories = =

= = Examination and syllabus = =

The exam consists of two parts :
Part I ? Written Test
Section I : Radio Theory and Practice
Section 2 : Regulations
Part II ? Morse
Section 1 : Morse Receiving and Sending : (Speed : 5 words per minute)
Section 2 : Morse Receiving and Sending : (Speed : 12 words per minute)

The maximum number of marks that a candidate can secure is 100 . To pass the examination , a candidate must score a minimum of 40 (50 for Grade I) in each written section , and 50 (55 for Grade I) in aggregate for a pass .

= = = Radio theory and practice = = =

The Radio theory and practice syllabus includes eight subtopics :

The first subtopic is the elementary theory of electricity that covers topics on conductors , resistors , Ohm 's Law , power , energy , electromagnets , inductance , capacitance , types of capacitors and inductors , series and parallel connections for radio circuits . The second topic is the elementary theory of alternating currents . Portions include sinusoidal alternating quantities such as peak values , instantaneous values , RMS average values , phase ; electrical resonance , and quality factor for radio circuits . The syllabus then moves on to semiconductors , specifically the construction and operation of valves , also known as vacuum tubes . Included in this portion of the syllabus are thermionic emissions with their characteristic curves , diodes , triodes and multi @-@ electrode valves ; and the use of valves as rectifiers , oscillators , amplifiers , detectors and frequency changers , stabilisation and smoothing .

Radio receivers is the fourth topic that covers the principles and operation of TRF receivers and Superheterodyne receivers , CW reception ; with receiver characteristics such as sensitivity , selectivity and fidelity ; Adjacent @-@ channel interference and image interference ; AGC and squelch ; and signal to noise ratio (S / R) . Similarly , the next topic on transmitters covers the principles and operation of low power transmitters ; oscillators such as the Colpitts oscillator , Hartley oscillator , crystal oscillators , and stability of oscillators .

The last three topics deal with radio propagation , aerials , and frequency measurement . Covered

are topic such as wavelength , frequency , nature and propagation of radio waves ; ground and sky waves ; skip distance ; and fading . Common types of transmitting and receiving aerials such as Yagi antennas , and radiation patterns , measurement of frequency and use of simple frequency meters conclude the topic .

= = = Regulations = = =

Knowledge of the Indian Wireless Telegraph Rules and the Indian Wireless Telegraphs (Amateur Service) Rules are essential and always tested . The syllabus also includes international radio regulations related to the operation of amateur stations with emphasis on provisions of radio regulation nomenclature of the frequency and wavelength , frequency allocation to amateur radio service , measures to prevent harmful interference , standard frequency and time signals services across the world , identification of stations , distress and urgency transmissions , amateur stations , phonetic alphabets , and figure code are the other topics included in the portion .
Also included in the syllabus are Q codes such as QRA , QRG , QRH , QRI , QRK , QRL , QRM , QRN , QRQ , QRS , QRT , QRU , QRV , QRW , QRX , QRZ , QSA , QSB , QSL , QSO , QSU , QSV , QSW , QSX , QSY , QSZ , QTC , QTH , QTR , and QUM ; and CW abbreviations and prosigns such as AA , AB , AR , AS , C , CFM , CL , CQ , DE , K , NIL , OK , R , TU , VA , WA , and WB .

= = = Morse = = =

The syllabus includes the following Morse code characters : all alphabets , numbers , prosigns , and punctuations such as the full @-@ stop ; comma ; semi @-@ colon ; break sign ; hyphen and question mark .
Receiving
For Grade II , the test piece consists of a passage of 125 letters , five letters counting as one word . Candidates are required to copy for five minutes at the speed of five words per minute , international Morse signals from an audio oscillator keyed either manually or automatically . A short practice piece is sent at the prescribed speed before the start of the test . More than five errors disqualifies a candidate . For Grade I , the test piece consists of a passage of 300 characters : letters , figures , and punctuations . The average words contain five characters and each figure and punctuation is counted as two characters . Candidates have to receive for five consecutive minutes at a speed of 12 words per minute .
Sending
For Grade II , the test piece consists of 125 letters , with five letters forming one word . Candidates are required to transmit by using a Morse key for five consecutive minutes at the minimum speed of five words per minute . A short practice piece is allowed before the test . Candidates are not allowed more than one attempt in the test . More than five uncorrected errors disqualifies a candidate . For Grade I , the speed sent is 12 words per minute .

= = Fees = =