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**THE INDIAN WIRELESS TELEGRAPH (AMATEUR SERVICE)  
RULES, 1978 as amended by The Indian Wireless  
Telegraphs (Amateur Service)**

**Amendment Rules, 1984 - G.S.R.No.1225/84,  
Amendment Rules, 2005 - GSR 280 (E) dt 1-4-2010**

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G.S.R. No. 1499/78.- In exercise of the powers conferred by section 4 and section 7 of the Indian Telegraph Act, 1885 (13 of 1885), the Central Government hereby makes the following rules for the conduct of wireless telegraphs in the amateur service, established, maintained, and worked by persons licensed under the said Act.

**1. Short title and commencement:**

- (1) These rules may be called the Indian Wireless Telegraphs (Amateur Service) Rules, 1978.
- (2) They shall come into force on the 17th October, 1984.

**2. Definitions :**

In these rules, unless the context otherwise requires,-

- a) `Act' means the Indian Telegraph Act, 1885 (13 of 1885)
- b) `amateur service' means a service of self training, inter-communication and technical investigations carried on by amateurs that is, by persons duly authorised under these rules interested in radio technique solely with a personal aim and without pecuniary interest; `amateur station', and `station' shall have the meaning respectively assigned to them in the Convention;
- c) `Amateur Radio Beacon' means a station in the Amateur Service having transmitter (s) emitting carrier wave along with identification signals at regular interval. Such beacons can be directional or non-directional;
- d) `Amateur Station', and "Amateur Satellite Service" `Station' shall have the meaning respectively assigned to them in the Convention;
- e) `Convention' means the International Telecommunication Convention, Malaga=Torremolinos, 1973, for the time being in force and the Radio Regulations and the Additional Radio Regulations annexed thereto but does not include any portion of the said Convention or Regulations regarding which the Central Government makes any reservation;
- f) `Licence' means a licence granted under section 4 of the Act for an amateur wireless telegraph station.

**3. Necessity for licence :**

No person shall establish, maintain and work an amateur wireless telegraph station except under and in accordance with the terms and conditions of an appropriate licence under these rules.

**4. Categories of licence :**

There shall be TWO categories of licences, namely :

- (i) Amateur Wireless Telegraph Station Licence (GENERAL)
- (ii) Amateur Wireless Telegraph Station Licence, (RESTRICTED)

### **5. Eligibility for licence :**

(1) A licence may be granted subject to such conditions contained in Annexure I to these rules –

(i) to a person,-

(a) who is a citizen of India;

(b) who is not less than 18 years of age;

(c) who qualifies the Amateur Station Operators' Examination for the award of licence or holds either of the following certificate of proficiency, namely:

(i) Radio-communication Operators' General Certificates;

(ii) First or Second Class Radio-telegraph Operators' Certificate;

Provided that the holder of a Special Radio Telegraph Operator's Certificate may also be considered eligible for the award of Amateur Wireless Telegraph Station Licence RESTRICTED.

(iii) to a bonafide amateur radio society, club or a school, college, or an institution or a university in India, which has the aim of investigations in the field of radio or the training of persons in radio communication techniques.

Provided that the licence shall be issued in the name of an authorized official of the society, club, school, college, institute or a University in India holding a category of licence appropriate to the transmissions to be conducted by the station including amateur radio beacon transmission.

(2) Notwithstanding anything contained in sub-clause (b) of clause (i) of sub-rule (1), the Central Government may grant, to bonafide experimenters between the ages of 14 and 18 years, Amateur Wireless Telegraph Station Licence GENERAL and to those between the ages of 12 and 18 years, Amateur Wireless Telegraph Station Licence, Grade RESTRICTED.

(3) Notwithstanding anything contained in sub-clause (c) of clause (i) of sub-rule (1), the Central Government may recognize, subject to any conditions it may prescribe from time to time, such other radiotelegraph operators' certificates or Amateur Station Operators' Certificates as are issued by a competent authority in any other country as equivalent to qualifications referred to in aforesaid sub-rule for the purpose of grant of licence under these rules.

### **6. An application for licence :**

An application for the grant of licence from:

(a) an individual, or

(b) an Amateur Radio Society or club or a school, college or an institute or a University in India-

shall be made to the Central Government in Annexure II or Annexure III respectively to these rules, shall be made to the Central Government in Annexure II or Annexure III respectively to these rules, together with all the subsidiary forms and documents duly filled in and completed in all respects.

## **7. Eligibility for admission to amateur station Operators Examination :**

No person shall be eligible for admission to an examination for the grant of licence unless :-

(a) such a person fulfils the provisions contained in sub-clauses (a), (b) and (c) of clause (i) of sub-rule (1) of rule 5;

(b) such person pays the fees on the following scale, namely :-

(i) Amateur Wireless Telegraph Station Licence (GENERAL)..... Rs. 100.00

(ii) Amateur Wireless Telegraph Station Licence, (RESTRICTED)..... Rs. 100.00

(c) a period of atleast one month has elapsed since he last appeared in an examination and failed

## **8. Examinations :**

(1) The examinations for the grant of a licence shall be held at a place and on a date as may be notified by the Central Government from time to time.

(2) An application for licence in Annexure II or, as the case may be, in Annexure III to the rules shall be submitted not later than the 15th of the month preceding that in which it is desired to take the examination.

(3) Any person admitted to the examination and found guilty of impersonation or of submitting fabricated documents or documents which have been tampered with or of making statements which are incorrect or false or of suppressing material information or of using or attempting to use unfair means in the examination hall or otherwise resorting to any other irregular or improper means for obtaining admission to the examination may, in addition to rendering himself liable to criminal prosecution, be debarred either permanently or for a specified period from appearing in any of the examinations held for the award of licence under these rules:

Provided that no order under this sub-rule shall be made unless the person concerned has been given a reasonable opportunity or making a representation against the action proposed to be taken.

(4) If any person is found guilty of any malpractice referred to in sub-rule (3) after the grant of a licence to such person, the Central Government may, in addition to prosecuting him cancel the licence so given :

Provided that the Central Government may, pending the cancellation of the licence, suspend or endorse such licence :

Provided further that no order under this sub-rule shall be made unless the person concerned has been given a reasonable opportunity of making a representation against the action proposed to be taken.

### **9. Grant of licence :**

Every category of licence shall be in the form set out in Annexure IV to these rules.

### **10. Observance of conditions of licence, Convention and rules under the Act :**

(1) Every licensed amateur wireless telegraph station shall be established, maintained and worked in accordance with -

(a) the conditions contained in Annexure I to these rules;

(b) the provisions of the Convention;

(c) the rules made by the Central Government under section 7 of the Act for the conduct of wireless telegraphs in so far as they are applicable.

(2) Notwithstanding sub-rule (1) the Central Government may modify, vary, cancel or revoke any of the conditions of licence contained in the said Annexure I at any time either by specific notice in writing to the licensee, or by means of a general notice published in the Official Gazette or in a newspaper published in New Delhi.

(3) The licensee shall at his own expense, give effect to any variations in the conditions of licence,

### **11. Period of validity :**

A licence granted under these rules shall be issued for a period of 20 years or Life-Time (which is till the 81st birthday of the person, further to which the licensee can apply without any fee for renewal up to 10 years every time), as the case may be, commencing on the date of issue of the licence and expiring on the last day of the month preceding the month of issue.

### **12. Fee for licence:**

A licence fee on the following scale shall be payable to the Central Government on receipt of instructions from that Government and in the manner directed by it:-

Category of licence	20 YEARS	LIFE TIME
(i) Amateur Wireless Telegraph Station Licence (GENERAL)	1000.00	2000.00
(ii) Amateur Wireless Telegraph Station Licence (RESTRICTED)	1000.00	2000.00

(2) The licence fee shall not be refundable on ground of licensee`s inability to establish or make use of the licensed Amateur Wireless Telegraph Station or for adjustment towards higher category of licence.

### **13. Authorised frequency bands, power and emission :**

A holder of licence shall use, as appropriate to the licence, such frequency bands, power and classes of emission as are set out in Annexure V of these rules : Provided that the Central Government may by special or general order make changes in the usage of frequency bands, power and types of emission where that Government is satisfied, that it is expedient to do so, keeping in view, among others, the provisions of the Convention, need for enforcement of better technical standards in respect of equipment and national and international radio interference pattern.

### **14. Renewal of licence :**

(1) On the expiry of the validity of a licence, it may be renewed for a period of twenty years or Life-Time if the licensee,-

(a) makes an application for renewal at least two months before the date of expiry of the licensee or within five years of the date of expiry, stating a valid reason for not renewing in time. If the license is applied for renewal after the expiry date, a late fee of Rs.100 for every 6 months of delay or part thereof is payable along with the renewal fee.

(b) has actively operated his station during the past years prior to the date of expiry of his licence and provides a self declaration to the effect that he has made contacts with other amateur stations on atleast 40 occasions per year.

(c) pays fees on the following scale, namely :-

CATEGORY OF LICENCE	20 YEARS
(i) Amateur Wireless Telegraph Station Licence (GENERAL)	1000.00
(ii) Amateur Wireless Telegraph Station Licence (RESTRICTED)	1000.00

(2) The licence fee shall not be refundable on ground of licensee's inability to establish or make use of the licenced Amateur Wireless Telegraph Station or for adjustment towards higher category of licence.

(3) The document showing the renewal of licence issued by the Central Government shall be kept along with the licence to which it refers.

(4) It shall not be obligatory for the Central Government to issue a notice that the licence is due for renewal.

### **15. Surcharge for late renewal :**

In case the holder of a licence does not apply for its renewal prior to the date of expiry of the licence referred to in sub-rule (1) of rule 14, he may apply for the renewal of licence subsequently also but within a period of five years after the date of expiry of the licence on payment of a surcharge at the rate of Rs.100/- for every half-year or part thereof. The licence in such a case, shall be renewed from the date of expiry of the licence..

### **16. Register for wireless telegraphy apparatus :**

Every licensee shall maintain a register in respect of all wireless telegraphy apparatus established, maintained and worked by him at the amateur station in the form set out in Annexure VI of these rules.

### **17. Location of Amateur Station :**

The location of the amateur station shall be specified in the licence alongwith the usual residence of the licensee endorsed therein and it shall be operated only from the place so fixed. Provided that the Central Government may, permit the change of location if the licensee applies for it in writing giving particulars of the change and submits the license for endorsement, and pays a fee of Rupees Two Hundred.

### **18. Portable and mobile amateur station :**

Without prejudice to rule 17, the Central Government may in addition to an amateur station licensed for a specified location issue a special authorisation to establish, maintain and work an amateur station as a portable station or a mobile station fixed on board a motor vehicle for a specific period in special occasions like exhibitions and jambories or for specific technical investigations in radio if-

(i) application for such authorisation is made well in advance indicating, among others, the specific period for which the authorisation is required, nature of investigations or details in regard to occasion as the case may be, and area of operation ; (ii) the applicant holds an Amateur Wireless Telegraph Station Licence GENERAL; (iii) the applicant pays an additional fee of Rs.200/-.

(2) The special authorisation shall, in addition to the conditions specified in rule 10, be subject to following, namely:-

(i) The special authorisation shall not be issued for a period more than 90 days. (ii) The licensee's amateur station at the fixed location and the mobile station shall not communicate with each others; (iii) the suffix `MO' shall be added to the callsign already authorised to the licensee's amateur station at the fixed location for use by the portable or mobile station. Such callsign shall be followed by the location of the station. (iv) Such other conditions as the Central Government may determine from time to time.

(3) The special authorization may be withdrawn or the conditions contained therein varied at any time by the Government.

### **19. Amateur Station on board ship :**

(1) Without prejudice to rule 17, the Central Government may on receipt of an application authorise establishment, maintenance and working of an amateur station on board a ship registered in India. Applications for such authorisation shall be accompanied by a written approval of the master or owners of the ship concerned.

(2) The establishment, maintenance and working of amateur stations on board ships shall, in addition to the conditions specified under rule 10, be subject to such other conditions as the Central Government may determine from time to time and such conditions, among others, shall include the following, namely :-

(i) The amateur station on board ship shall be operated only while the ship is in International waters or Indian territorial waters. Its operation within the territorial waters of another country shall be in conformity with laws and regulations of the country concerned.

(ii) It shall not be operated whilst the ship is in any harbour in India.

(iii) The callsign allotted to such stations shall have suffix `MS' followed by the callsign of the ship in case of radiotelegraphy or the official name of the ship in case of radiotelephony.

(iv) The amateur station on board a ship shall discontinue operation at any time on request of an officer of the Central Government, the Master or Radio Officer of the ship or any land station.

## **20. Loss and Issue of Duplicate of Licence and Document showing the Renewal of Licence :**

(1) A person whose Licence or the document showing the renewal of licence has been lost, mutilated or destroyed shall notify the same to the Central Government. An application in Annexure VII of these rules for the duplicate shall be made to the Central Government embodying a statement of the circumstances involved in the loss, mutilation or destruction of the licence or the document showing the renewal of licence for which a duplicate is required. If the licence or the document showing the renewal of licence has been lost, the applicant must state the circumstance in which it was lost and the reasonable search has been made for it, and further that in the event it be found, either the original or the duplicate shall be returned for cancellation. The mutilated licence or the document showing the renewal of licence for which the duplicate is required should be forwarded alongwith the application for cancellation.

(2) The Central Government may issue duplicate copy of any licence or the document showing the renewal of the licence and the following charges shall be levied for such issue-

(i) For duplicate of licence . . . . . Rs. 100.00

(ii) For duplicate of the document showing the renewal of licence..... Rs. 100.00

## **21. Revocation of licence :**

(1) The Central Government may, at any time, revoke the licence-

(i) On the breach of any of the conditions of licence contained in Annexure I; or

(ii) In default of payment of any fees payable under these rules :

Provided that, before revoking a licence, the license shall be given a reasonable opportunity of making a representation against the action proposed to be taken.

(2) The licensee shall not be entitled to any compensation arising out of revocation of his licence nor will any part of the fees paid for the licence shall be refunded for the period a licence stands revoked.

## **22. Transfer of licence :**

A licence shall not be transferable :

Provided that the Central Government may permit the transfer of a licence granted to an authorised official of an amateur radio society or club or a school, college or an institute or



a University in India in favour of his successor if such successor holds a category of licence appropriate to the transmissions to be conducted by the amateur station.

### **23. Operation of licensed amateur station :**

No person other than the licensee shall be emitted to operate the licensed amateur station :

Provided that -

(a) in the presence of the licensee himself, the station may be operated by an other person holding a valid licence of comparable or higher category. The licensee, however, shall be personally responsible for the observance of these rules as if the station is operated by him.

(b) in case of a licence issued to an authorised official of an amateur radio society or club or a school, college, or an institution or a University in India, the station may also be operated by a person who holds a licence of equivalent or higher category with the prior permission of the Central Government in writing; if the licensee keeps personal surveillance over the operation of the station. The licensee shall be responsible for the observance of these rules.

### **24. Surrender of licence :**

A licence which is revoked or which has become invalid and licensee does not desire to renew it shall be surrendered to the Central Government for cancellation and record.

### **25. Dual holding of licence :**

No person shall be granted more than one licence at the same time :

Provided that the Central Government may exempt a person, holding a licence in his name for amateur radio society or a school, college or an institute or a university in India, from the operation of this rule.

### **26. Admission of foreign national to examination and grant of licence :**

(1) Notwithstanding anything contained in these rules, the Central Government may, subject to such terms and conditions as it may impose from time to time, admit a person, who is not a citizen of India, to an examination for the grant of a licence or grant him a licence if otherwise qualified.

(2) The conditions under sub-section (1) shall, among others, include the following, namely :-

(i) the country of which the applicant is citizen, grants reciprocal facilities to Indian nationals :

Provided that it shall not apply where the Central Government considers that reciprocal facilities are not necessary ;

(ii) the applicant is above the age of 18 years;

(iii) the applicant's stay in India is not likely to be less than one year from the date of application.

(iv) the applicant is a holder of an appropriate category of amateur station operator's certificate or licence issued by a competent authority in any other country and recognised by the Central Government.

(v) the licence under this rule shall be initially granted for a period of one year or for the period of validity of visa, for which the applicant's passport is endorsed, whichever is less.

## **27. Penalty for breach of these rules :**

Any breach of these rules, other than a breach which is an offence under section 20 or 21 of the Act, shall be punishable with fine which may extend -

(i) when the person is licensed under the Act, to one thousand rupees and in the case of continuing breach a further fine of two hundred rupees for every day after the first during the whole of any part of which the breach continues;

(ii) when a servant of the person so licensed or another person is punishable for the breach one fourth of the amounts specified in clause (i).

## **28. Repeal and saving :**

(1) On the commencement of these rules, the Indian Wireless Telegraphy (Amateur Service) Rules, 1958, shall cease to be in force.

(2) Notwithstanding such cesser,-

(a) Where before such commencement any person has passed the Amateur Station Operators' Certificate GENERAL or RESTRICTED Examination, such person shall not be required to pass any such examination under these rules;

(b) Where, before such commencement any person was granted Amateur Wireless Telegraph Station Licence Grade I, or any such Licence was renewed and the period for which such Licence was granted or renewed extends beyond the commencement of these rules, then, such Licence shall continue to be in force for the period specified in the Licence.

## **ANNEXURE I**

### **CONDITIONS FOR THE CONDUCT OF AMATEUR TELEGRAPH STATION**

**(See rules 5 & 10)**

#### **I. Use of the Amateur Station :**

(1) The amateur station shall be used as part of self training, intercommunication and technical investigations in radio techniques solely with a personal aim and without pecuniary interest :

Provided that when the station is licensed to an amateur radio society or club, or a school, college or an institute or a University, the use of the station "shall be" confined to

technical investigation and training in radio communication techniques without pecuniary interest.

(2) The station may also be used for the purpose of receiving transmissions in the Standard Frequency Service to facilitate operation of the station within the authorised frequency bands.

(3) Except as provided in these rules, the licensee shall not assign, under-let or otherwise dispose off or admit any person to participate in the benefits of the licence.

## **II. Messages :**

### **(1)**

(a) Radio communications may be exchanged with other stations similarly authorised. The amateur stations are forbidden to communicate with amateur stations of countries whose administrations have notified the International Telecommunication Union of their objection to such radio communications.

(b) Transmissions shall be made in plain language and limited to messages of a technical nature relating to tests and to remarks of personal character (excluding business affairs or transactions) in which the licensee, or the person with whom he is in communication, are directly concerned and for which, by reason of their unimportance, recourse to the public telecommunication service is not justified.

(c) Special recordings for reproduction sinusoidal tone or tones within the audio frequency spectrum which may be either constant or steadily changing in frequency may be used.

### **(2) The licensee is forbidden to transmit,-**

(a) messages like the reproduction of broadcast programmes or tape recordings or transmissions of entertainment value or music;

(b) false or misleading calls, or signals, news, advertisements, communications of business, statements on topics of political or industrial controversy;

(c) superfluous signals or any matter which is indecent or of obscene character or of a seditious tendency or which is grossly offensive or such as is likely to arouse racial, religious, or communal animosity;

(d) messages for pecuniary reward or any messages for, or on behalf of third parties;

**(3)** Notwithstanding clause (a), sub-condition (1) and clause (d), sub-condition (2) the licensees in case of failure of normal telecommunication facilities, are permitted to handle third party messages, pertaining to natural calamities such as earthquake, floods, cyclones and wide spread fires, originating from and addressed to a competent civil authority namely, (a) District Magistrates or Deputy Commissioners or Collectors of the district and (b) any other officer authorised by authorities mentioned at (a) above. The licensee shall inform by letter addressed to the licensing authority regarding the use of his amateur station for such purposes on each such occasions.

## **III. Frequencies, Emissions and Power :**

The amateur station shall be operated on frequencies that are within the frequency bands authorised to respective categories of licenses under rule 13 and on such classes of emissions and power not exceeding that specified in the said rule.

#### **IV. Frequency Control and Measurement :**

(1) The transmitting apparatus shall be tuned as accurately as possible to ensure that no energy is radiant on any frequency outside the limits of the authorised frequency bands.

(2) The licensee shall have at the licensed amateur station a reliable frequency measuring equipment to verify, each time the frequency of the transmitter is changed and whenever it is necessary to check the transmitted frequency, the emissions are within the authorised frequency bands. The licensee shall take all steps necessary to maintain the accuracy of the frequency measuring equipment.

#### **V. Non-Interference :**

**(1)** The amateur station shall be so designed, constructed, erected, maintained and worked as not to cause interference with any wireless telegraph service functioning, within or without India, in accordance with the provisions of the Convention or the wireless signaling between any fixed, land or mobile stations of Indian Land, Naval or Air Force or between such stations and any station abroad :

Provided that in the event of interference being caused by the station the licensee shall discontinue or restrict transmissions, pending adjustment of the equipment, on request from,-

(a) the Central Government; or (b) any land station.

**(2)** The licensee shall deploy all necessary means to ensure that the radiated frequency is free from harmonics, key clicks, hum and other forms of spurious emissions.

**(3)** The licensee shall ensure that the transmitter is not over modulated.

**(4)** The use of class B emissions (damped waves) is forbidden.

#### **VI. Log (Dairy of the radio service) :**

(1) A chronological record of all transmissions emanating from or received at the amateur station shall be kept in bound book (not loose-leaf) showing the following :

(a) Date and time of each transmission;

(b) a summary of the communications exchanged;

(c) a brief description of the experiments and tests undertaken;

(d) the call sign of station or stations with which messages have been exchanged, times and type of emission employed in each case;

(e) time of opening and closing down the amateur station;

(f) in case of portable or mobile amateur station the particulars of temporary location.

(2) All times in the log shall be stated in the Indian Standard Time.

(3) No gaps shall be left between entries in the log and they shall be made and initialed at the time of receiving and transmitting.

(4) In case the station is operated by a person other than the licensee (see rule 23), the licensee shall ensure that log is signed by that person indicating his name, call sign and licence number.

(5) Licensee shall preserve the log for a period of one year from the date of last entry therein before it is destroyed: Provided that no log shall be destroyed for such further period as the Central Government may direct.

(6) The form of log is shown in the Table attached to these conditions.

## **VII. Wireless Telegraphy Apparatus :**

(1) The amateur station shall be equipped for reception as well as transmission except in the case of Short Wave Listeners Amateur Wireless Telegraph Station Licence when it shall be equipped for the former only.

(2) The Wireless telegraphy apparatus and other accessory equipment used or intended to be used by the licensee shall be so arranged as not to endanger the safety of licensee or other persons.

(3) The wireless telegraph apparatus shall be kept in a safe condition and housed in such manner as to preclude access to unauthorised persons.

(4) The transmitter shall be of a type that has a frequency stability comparable to that of a crystal control.

(5) Meters of standard accuracy shall be installed to measure the d.c. power input to the anode circuit of the final radio frequency stage of the transmitter.

(6) The aerial used or intended to be used shall be so erected, fixed, or placed as not to cross above or fall on to any power, telegraph or telephone line.

## **VIII. Secrecy of Correspondence :**

If any message which the licensee is not entitled to receive is, nevertheless received, the licensee shall not make known or allow to be made known its contents, its origin or destination, its existence or the fact of its receipt to any person (Other than duly authorised officer of the Central Government or a competent legal tribunal) and shall not reproduce in writing, copy or make any use of such message or allow the same to be reproduced in writing, copied or made use of.

## **IX. (1) General Radiotelegraph and Radiotelephone Procedure :**

(1)

(a) Before transmitting, the station shall take precautions to ensure that its emissions will not interfere with

transmissions already in progress. If such interference is likely the transmission shall not commence

till there is an appropriate break in the communications in progress.

(b) The call sign endorsed in the licence shall be sent for identification at the beginning and at the end of

each period of transmission. When the period of transmission exceeds 10 minutes the call sign shall be

repeated. Licensee shall not make transmission without identification or with false identification.

(c) Prolonged calls and transmissions shall be avoided.

(d) When it is necessary to spell out call sign, certain expressions, difficult words, abbreviations, figures etc., the phonetic alphabet and figure code given in the Convention shall be used.

## (2) Call and Reply Procedure

(a) The call shall consist of –

- the call sign of the station called not more than three times;
- the word DE (in case of radiotelegraphy) and the words “This is” (in case of radio telephony).
- the call sign of the calling station, not more than three times.

(b) The reply to call shall consist of –

the call sign of the call sign station, not more than three times;

the word DE (in case of a radiotelegraphy) and the words “This is” (in case of radio telephony).

the call sign of the station called, not more than three times.

(c) The call may be sent three times at intervals of two minutes; thereafter it shall not be repeated until an

interval of 10 minutes during which the operator shall listen in the frequency band in which the call has been made.

(d) In case of general call to all stations the signal `CQ' (in case of radiotelegraphy) and the words `Hello

all stations' or the signal `CQ' (in case of radiotelephony) shall replace the call sign of the station called in the calling procedure.

## (3) End of Transmission and Work :

(a) Transmission of a message shall be terminated by the signal AR (in case of radiotelegraphy) and the word `Over' (in case of radiotelephony).

(b) The end of work between two stations shall be indicated by each of them by means of signal VA (in case of radiotelegraph) and by the word `OUT' (or VA spoken as Victor Alfa) in case of radiotelephony.

(4) Tests :

(a) When it is necessary to make test signals either for the adjustment of a transmitter or a receiver or for any experiment, such signals shall not be continued for more than 30 seconds and shall be composed of series of VVV followed by the call sign of the station emitting the test signals. In case of radiotelephony series of VVV shall be replaced by the figures 1,2,3,4..... spoken in the figure code.

(b) For tests exceeding 30 seconds an artificial aerial shall be used.

(c) Emission of carrier wave is forbidden unless such wave is subjected to intelligible modulation.

**X. Inspection :**

(1) Any officer authorised by the Central Government in that behalf in writing by them, may at all reasonable times enter the station solely or jointly with any other person or persons for the purpose of inspecting and may inspect, examine or test any apparatus conduct of such inspections and tests and making available the licence, the station log or other records for examination by the inspecting officer.

(2) The licensee when called upon to do so by the Central Government shall arrange to forward the licence, the log book, or any other record or data for examination by that Government.

**XI. Powers to take possession of the Amateur Station and to order interception of messages :**

(1) On the occurrence of any public emergency, or in the interest of the public safety, the Central Government or a State Government or any officer specially authorised in this behalf by the Central Government or a State Government may, if satisfied that it is necessary or expedient so to do, take temporary possession (for so long as the public emergency exists or the interest of the public safety requires the taking of such action) of the Amateur Station.

(2) On the occurrence of any public emergency, or in the interest of the public safety, the Central Government or a State Government may, if satisfied that it is necessary or expedient so to do in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign state or public order or for preventing incitement to the commission of an offence, for reasons to be recorded in writing, by order, direct that any message of class of messages relating to any particular subject, shall not be transmitted or received or shall be intercepted by the station or shall be disclosed to the Government making the order or an officer thereof mentioned in the order.

(3) The licensee shall not be entitled to any compensation in respect of the exercise of the powers conferred by sub condition (1) and (2) or this condition.

**XII.** The licensee shall indemnify the Central Government against all actions, claims and demands which may be brought or made by any person, body corporate or company in respect any injury arising from any act licensed or permitted by the licence.

**XIII.** A copy of the Indian Wireless Telegraphs (Amateur Service) Rules., 1978 with further amendments shall be kept at the Amateur Station.

## **SYLLABUS AND THE DETAILS OF EXAMINATIONS FOR THE AWARD OF AMATEUR STATION OPERATOR'S LICENCE (Restricted) and (General)**

### **1. The examination shall consist of the following two parts:**

#### **PART 1 - Written Test**

It shall comprise of one paper containing two sections as under:

Section A: Radio Theory and Practice

Note - Applicants holding degree in Engineering/Science or Diploma in Engineering and having studied electronics or telecommunications shall be exempted from appearing in Section A of Part-I of the test.

Section B: National and international Telecommunication Union (ITU) Radio Regulations applicable to the operation of amateur station and those relating to the working of station generally.

#### **PART II - Morse (Only for General Certificate)**

Morse reception and sending (8 wpm)

### **2 Detailed syllabus:**

#### **2.1 Amateur Station Operator's Licence (Restricted) Examination**

##### **Part I - Written Test**

Section A: Radio Theory and Practice:

(I) Elementary Electricity and Magnetism:

1. Elementary theory of electricity- Passive Devices (Resistors; Inductors, Transformers, Capacitors) and Active Devices (Diodes; Transistors).
2. Kirchoff's current and voltage laws- Simple applications of the law.
3. Conductors and Insulators — Properties; units of circuit elements, Ohm's Law.
4. Conductance — Definition of self and mutual inductance;
5. Power and energy- Definition, Units and simple applications.
6. Permanent magnets and electromagnets — Definition, properties and their use.

(ii) Elementary Theory of Alternating Currents:



1. Sinusoidal alternating quantities – Definition of peak, instantaneous, R.M.S., average values and its simple application.

2. Phase, reactance, impedance, power factor- Definition, units and simple • applications.

3. Parallel and Series Circuits series and parallel circuits containing resistance, inductance, capacitance; resonance in series and parallel circuits, coupled circuits.

4. Rectifiers, voltage regulation and smoothing circuits – Their basic knowledge and simple application.

(III) Elementary theory of Semiconductor Devices:

1. Diodes and transistors- Properties use of these devices for construction of amplifiers, oscillators, detectors and frequency changers.

(IV) Radio Receivers:

1. Principles and operation of T.R.F. and super heterodyne receivers.

2. CW reception.

3. Receiver characteristics-sensitivity, selectivity, fidelity, adjacent channel and image interference, A.V.C. and squelch/circuits signal to noise ratio.

(v) Transmitter:

1. Principles and operation of low power transmitter, crystal oscillators, stability of oscillators.

2. Basic knowledge about construction of Semiconductor based transmitters.

(VI) Radio Wave Propagation:

1. Basic knowledge of Electromagnetic Spectrum.

2. Wave length, frequency, frequency bands.

3. Nature and propagations of radio waves, ground and sky waves, space waves, skip distance, skip zone and fading.

(VII) Aerials: Common types of transmitting and receiving aerials.

(VIII) Frequency Measurement: Measurement of frequency and use of simple frequency meters.

Section 8: Radio Regulations:

(a) Knowledge of :- (i) the Indian Wireless Telegraph Rules, 1973.

(ii) The Indian Wireless Telegraphs (Amateur Service) Rules, 1978 and amendments.

(b) Knowledge of ITU Radio Regulations as relating to the operation of amateur stations with particular emphasis on the following:

Item Regulation (2008 edition)	Provision of Radio
Designation of Emission.	Appendix-I
Phonetic alphabets and figure code.	Appendix 14
Nomenclature of the Frequency & Wavelength	Article 2
Frequency allocation for Amateur Services.	Article 5
Interference, measures against interference & tests.	Article 15
Identification of Stations.	Article 19
Distress Signal, Call and Message. Transmissions.	Article 30, 31, 32 & 33.
Urgency Signal, Call and Message Transmissions.	Article 30, 31, 32 & 33.
Amateur Station.	Article 25
Call Sign series allocated to India.	Appendix 42

(c) Standard Frequency and Time Signals Services in the World.

d) The following 'Q' codes and abbreviations shall have the same meaning as assigned to them in the Convention.

QRA, QRG, QRH, QRI, QRK, QRL, QRM, QRN, QRO, QRS, QRT, QRU, QRV, QRW, QRX, QRZ, QSA, QSB, QSL, QSO, QSU, QSV, QSW, QSX, QSY, QSZ, QTC, QTH, QTR, and QUM.

Abbreviations: AA, AS, AR, AS, C, CFM, CL, CQ, DE, K, NIL, OK, R, TU, VA, WA, WB.

Note:-

1. The written test will be of one hour duration. The maximum marks will be 100 and candidate must secure at least 40 % in each section and 50% in aggregate for a pass.

2. There will be NO Morse test for restricted grade.

2.2. Amateur Station Operators' License (General) Examination

Part I - Written Test

Section A: Radio Theory and Practice

In addition to the syllabus prescribed for Amateur Station Operator's License (Restricted) examination, following items shall be included in the syllabus of Amateur Station Operators' license (General) examinations:

(1) Principles of Communications:

1. Elementary idea of analog and digital communication.
2. Need for modulation; Modulation- amplitude, frequency and pulse modulation.
3. Elementary idea about demodulation.

(ii) Alternating current:

1. Basic concepts on construction of transformers.
2. Definition of Transformer losses.
3. Transformer as a matching device

(iii) Semi Conductor devices and Transistors:

1. Elementary principles of conduction and construction;
2. Symbols and biasing methods.

(iv) Power Supplies:

1. Basic knowledge of half wave and full wave rectifiers.
2. Definition and application of Bridge rectifier, smoothing and regulating circuits.

(vii) Transmitters and Receivers:

1. Elementary principles of transmission and reception of Facsimile and Television signals,

(viii) Propagation:

1. Characteristics of ionosphere and troposphere.
2. Properties of ionosphere layers.
3. Critical frequency and day / night frequencies.

(ix) Aerials:

1. Principles of radiation.
2. Aerials for different frequency bands including aerials for microwave,

(x) Space Communications

1. Elementary principles of communication via satellites.

Secon B: Radio Regulations:

Same syllabus as prescribed for Amateur Station Operators' License (Restricted) examination.

The above written test will be of two hour duration. The maximum marks will be 100. A candidate must secure at least 50 % in each section and 60% in aggregate for a pass.

## Part II-Morse

Morse receiving: (Speed: 8 words per minute)

The test piece will consist of a plain language passage of 200 characters which may comprise of letters, figures. Test piece may also contain the following punctuations i.e. full stop; comma; semi colon; break-sign; hyphen and question mark. The average words shall contain five characters and each figure and punctuation will be counted as two characters. The test will be for five consecutive minutes at a speed of 8 words per minute. A short practice piece of one minute shall be sent at the prescribed speed before the start of the actual test. Candidates will not be allowed more than one attempt in Morse reception and sending test, the test may be written in ink or pencil but must be legible. Over-writing will be treated as error. If any correction is required the candidate may struck the wrong character and write the correct above the character. More than 5 errors will disqualify a candidate. However if a candidate receives without any error in any part of the passage continuously for one minute duration will be declared successful in the Morse reception test.

Morse Sending (Speed: 8 words per minute)

The test piece will be similar to Morse Receiving test for Amateur Station Operators' License (General) examination. Candidates are required to send for five consecutive minutes at a speed not less than 8 words per minute. Other conditions are the same as applicable to Amateur Station Operators' License (General) examination.

Note- A candidate shall have to pass both receiving and sending simultaneously.

“ *Radio astronomy is a subfield of astronomy that studies celestial objects at radio frequencies* ”



**INDRA**

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