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NOTIFICATION

No.B.16013/24/2013-P&E, the 28th February, 2017. In compliance with the decision taken by Council of Ministers in its meeting held on 8th Feb. 2017 the Governor of Mizoram is pleased to notify Mizoram Electrical Licensing Regulations 2017 with immediate effect.

This issues with the concurrence of Finance Department vide their I.D. No.FIN(E) 596/2016 dt.12.12.2016 and Law & Judicial Department vide their I.D No.LJD-33/2016/96 dt.13.7.2016.

C. Lalhmachhuana,
Secretary to the Govt. of Mizoram,
Power & Electricity Department.

NOTIFICATION

No B.16013/24/2013-P&E the 28th Feb. 2017. The Governor of Mizoram is pleased to order that grant of Licences to Electrical Contractors, Certificates of competency to Electrical Supervisors and Permits to Electrical Workmen shall be governed by the Mizoram Electrical Licensing Regulation 2017 framed in accordance with Regulation 29 of Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 namely -

The Mizoram Electrical Licensing Regulations, 2017

1. Short title, extent and commencement:

- 1) These Regulations shall be called the Mizoram Electrical Licensing Regulations, 2017.
- 2) They shall extend to the whole of Mizoram.
- 3) They shall come into force from the date of publication in the official Gazette.
- 4) The words used in these Regulations shall have the same meaning as defined and assigned to them in the Electricity Act, 2003 and Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010.

2. Abbreviation and Definitions:

- 1) Chairman means Chairman of Mizoram Electrical Licensing Board.
- 2) Vice Chairman means Vice Chairman of Mizoram Electrical Licensing Board.
- 3) Secretary means Secretary to the Mizoram Electrical Licensing Board.
- 4) Assistant Secretary means Assistant Secretary to the Mizoram Electrical Licensing Board.
- 5) Board means Mizoram Electrical Licensing Board.
- 6) MELB means Mizoram Electrical Licensing Board.
- 7) Examination means examination conducted by Mizoram Electrical Licensing Board for Supervisors Certificate and Workman's Permit.
- 8) MELR means Mizoram Electrical Licensing Regulations.
- 9) JERC means Joint Electricity Regulatory Commission for Manipur & Mizoram.

3. Constitution of Licensing Board:

For carrying out the purposes of these Regulations, a Licensing Board namely "the Mizoram Electrical Licensing Board" hereinafter referred to as "the Board" shall be constituted by the State Government of Mizoram.

4. Members of the Licensing Board:

The Board shall consist of the following members:-

- 1) The Secretary to the Government of Mizoram, P&E Department - *Chairman*
(*Ex-officio*)
- 2) The Joint Secretary (Technical) to the Government of Mizoram, P&E Department - *Vice Chairman*
(*Ex-officio*)
- 3) The Chief Electrical Inspector, Government of Mizoram - *Secretary*
(*Ex-officio*)
- 4) The Electrical Inspector, Government of Mizoram - *Asst. Secretary*
(*Ex-officio*)
- 5) Principal, Industrial Training Institute, Aizawl - *Member*
- 6) Representative of Public Works Department, Mizoram - *Member*
to be nominated by the Department

- 7) Representative of Power & Electricity Department,
Mizoram to be nominated by the Department - *Member*
- 8) Representative of Public Health Engineering Department,
Mizoram to be nominated by the Department - *Member*
- 9) General Manager, Directorate of Industries - *Member*

The State Government may add or reduce number of the members of the Board, other than the Ex-officio members. The Board shall have powers to act notwithstanding any vacancy in its membership.

5. Place of office:

The office of the Board shall be situated in the state capital.

6. Functions of the Board: The functions of the Board shall be -

- 1) to grant Licences to Electrical Contractors;
- 2) to conduct examination for Electrical Supervisors and Electrical Workman;
- 3) to grant Certificates to Electrical Supervisor and Permit to Electrical Workman;
- 4) to enquire into allegations of incompetence, negligence, violation of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 or malpractice on the part of Workman/Supervisor/Contractor holding Permits/Certificates/Licences granted by the Board or breach of conditions as may be considered necessary;
- 5) generally to carry out the provisions of these Regulations;
- 6) to decide on the cases of violation of any of the provision of these regulations on any person/group of people, Electrical Contractors, Workman and Supervisors as per Regulation No 39;
- 7) to advise the State Government regarding all matter related to issue of licences, certificate or permits and any other matter;
- 8) to make Amendment of some or all of Mizoram Electrical Licensing Regulation.

7. Meeting of the Board and Quorum:

- 1) The Board shall meet once in a year and at such times when the Secretary feels necessary for transaction of business.
- 2) The Chairman or Vice Chairman and Secretary, together with three other members shall form a quorum at any meeting of the Board.
- 3) In the absence of the Chairman the Vice Chairman will preside over the meeting.

8. Duties of the Chairman: The duties of the Chairman shall be:-

- 1) to preside over meetings of the Board;
- 2) to take necessary actions to implement decisions of the Board;
- 3) to keep liaison between the Board and the Government.

9. Duties of the Vice Chairman: to preside over the meetings of the Board in the absence of the Chairman.

10. Duties of the Secretary: The duties of the Secretary shall be:-

- 1) to call a meeting of the Board in consultation with the Chairman;
- 2) to take necessary actions to implement decisions of the Board;
- 3) to receive applications of Contractor's Licence, Supervisor's Certificate, Workman's Permit and process them including conduct of examinations;
- 4) to sign and issue Contractor's Licence, Supervisor's Certificate, and Workman's Permit. In case of new Licence, Certificate and Permit, Secretary will issue after obtaining Chairman's approval;
- 5) to maintain Registers of Contractor's Licence, Supervisor's Certificate and Workman's Permit;

- 6) to make all correspondences on behalf of the Board regarding issues/renewal/ allegation etc, in respect of Licences, Certificates and Permits;
- 7) to place before the Board/Chairman any matter regarding violation of Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 or condition of Licences/Certificates/Permits by Contractors/ Supervisors/Workmen or execution of works by person/contractor without valid licence issued by Mizoram Electrical Licensing Board, and can take appropriate action in accordance with the decision of the Board to the violators of Mizoram Electrical Licensing Regulations.

11. Duties of the Assistant Secretary: The duties of the Assistant Secretary shall be:-

- 1) to assist the Secretary in discharge of his duties;
- 2) to act as Secretary in the absence of the Secretary.

12. Electrical Contractor's Licence:

- 1) No electrical installation work shall be undertaken except by an Electrical Contractor licensed under these regulations read with Regulation 29 of Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010.
- 2) An Electrical Contractor's Licence shall be granted only to a person/firm approved by the Board who:-
 - a) himself holds an Electrical Supervisor's Certificate or who has in his employ at least one Supervisor for Class – I and one Supervisor for class - II holding a valid Certificate granted by the Board and who is not a full time employee of a Government or any other agency;
 - b) has in his employ at least two Electrical Workmen for class - I and one Electrical Workman for Class - II holding a valid Permit granted by the Board and who is not a full time employee of a Government or any other agency;
 - c) is a permanent resident of Mizoram and not below 18 years of age;
 - d) has in his possession the instruments prescribed for the class of contractor which he proposes to apply;
 - e) has the following documents: The Electricity Act 2003. The Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006. The Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010. The Intimation of Accidents (Form and Time of Service of Notice) Rules, 2005. Mizoram Electrical Licensing Regulations, 2017. The relevant Joint Electricity Regulatory Commission for Manipur & Mizoram Regulations viz:-
Electricity Supply Code and any other Notifications regarding regulations of electric supply issued by JERC for Mizoram and Manipur from time to time.
 - f) Fulfill the condition laid down in the application form and pays the prescribed initial fee just after the application is approved by the Board.
 - g) any other requirement that the Board may prescribe from time to time such as proof of address of the Contractor's establishment, Financial capability, etc.

Provided that the Board may refuse to grant such licence to any person (or firm/body) who (or which) in the opinion of the Board, is not fit to hold such licence. The Electrical Contractor's Licence is not transferable.

13. Classes of Electrical Contractors:

- 1) There shall be three classes of Licensed Electrical Contractors namely Class - I, Class - II and Special Class (Temporary).
- 2) **Class – I Electrical Contractor** shall be eligible to undertake and carry out all types of Electrical works irrespective of voltage limit, subject to the limit of the Supervisor Certificate held by him or the Supervisor employed by him. The Scope of the work may be increased when the limit of the Certificate is increased by paying the prescribed fees.

A Class - I Contractor's Licence may be granted to a person/firm/body who himself holds a valid Certificate of Competency issued under the regulations and actually works as a full time Supervisor in respect of the works undertaken by him and at least two Workmen, each holding a valid permit issued under these Regulations, under his full time employment or to a person or a firm having at least one Supervisors, holding a valid Certificate of Competency issued under these Regulations and at least two Workmen, holding a valid permit issued under these Regulations under his or its fulltime employment provided such person or firm has in his/its possession all the instruments and tools of the B.I.S. standard in adequate number for carrying out the test and examinations .

- 3) The Contractor should possess at least the following instruments:
 - 1) Insulation Tester: 500V, 1000V, and 2500V - 1 No each.
 - 2) Earth Tester with accessories (0-10) Ohms - 1 No
 - 3) Voltmeter 0-600V - 1 No
 - 4) Tong Tester with Ammeter 300V - 1 No
 - 5) Phase Sequence Indicator - 1 No
 - 6) Crimping tool with Dye set - 1 No
 - 7) Suitable Rubber hand Gloves - 1 pair for each workman
 - 8) Portable drilling machine - 1 No

In addition to the above, the Contractor should have in his/its possession all the instruments and tools of B.I.S Standard in adequate number for carrying out the execution, tests and inspections of all classes of works authorized as specified by the Board.

- 4) **Class-II Electrical Contractor** shall be eligible to carry out electrical wiring and installation works up to 650 Volts, subject to the class limits of the Certificate of the Electrical Supervisor employed. The scope of the works may be increased when the limit of the Certificate is increased by paying the prescribed fees.

A Class-II Contractor's License may be granted to a person who himself holds a valid certificate of Competency issued under these regulations and actually works as a full time Supervisor in respect of the works undertaken by him and has at least one Workman, holding a valid Permit issued under these regulations, under his or its full time employment or to a person or a firm having at least one Supervisor holding valid Certificate of Competency issued under these regulations and at least one workman each holding a valid Permit issued under these regulations, under his or its full time employment provided such person or firm has in his or its possession all the instruments and tools of the B.I.S standard in adequate number for carrying out the tests and examination as required under the Rules.

- 5) The contractor should possess at least the following Instruments:
 - 1) Insulation Tester: 500V - 1 No
 - 2) Earth Tester with accessories (0-10) Ohms - 1 No
 - 3) Voltmeter 0-600V - 1 No

- | | | |
|----|--------------------------------|--------|
| 4) | Tong Tester with Ammeter, 300V | - 1 No |
| 5) | Portable drilling machine | - 1 No |
| 6) | Phase Sequence indicator | - 1 No |

In addition to the above, the Contractor should have in his/its possession all the instruments and tools of BIS Standard in adequate number for carrying out the execution, tests and inspections of all classes of works authorised as specified by the Board.

- 6) **Special Class (Temporary):** In addition to the above two general classes, there may be a Special Class (Temporary) Contractor's Licence which is non-renewable and shall be issued for a period of six months only under very special circumstances. Depending upon the limit of Supervisors and Workmen employed by the Contractor and the availability and Capacity of the testing instruments in his possession, this class of Contractor shall be eligible to undertake all types of works capable of being carried out by either Class-I or Class-II Contractors.

Provided that the Board may also grant Non-Renewable Certificate of competency for six months at a time to a Supervisor engaged by such firm or person on the strength of the Certificate of competency issued by competent authority of any other State.

14. When Electrical Contractor's License shall not be granted:

An Electrical Contractor's Licence shall not be granted to any holder of an Electrical Supervisor's Certificate or any holder of an Electrical Workman's Permit while he is the employee of another Electrical Contractor.

15. Application for Electrical Contractor's licence:

Application for Electrical Contractor's licence shall be made to the Secretary in Form - A by paying the schedule of fees in Annexure -1.

16. Forms of Electrical Contractor's Licence:

An Electrical Contractor's Licence shall be issued in Form - D

17. Cancellation of Electrical Contractor's Licence.

- 1) If the Electrical Supervisor/Workman, on the strength of whom an Electrical Contractor's Licence has been granted, leaves the service of such Electrical Contractor, such Contractor's Licence shall be deemed to have been suspended. If such Electrical Contractor fails to employ an Electrical Supervisor/Electrical Workman within one month from the date on which the Electrical Supervisor and Electrical Workman had left such Electrical Contractor's service, such Electrical Contractor's Licence shall be cancelled.
- 2) If an Electrical Supervisor/Workman to whom an Electrical Contractor's licence has been granted accepts employment under any other Electrical Contractor, the Contractor's Licence granted to such Electrical Supervisor/Workman shall be automatically cancelled.
- 3) The Board may, at any time cancel an Electrical Contractor's Licence if the person (or firm) to whom the Licence has been granted is in the opinion of the Board, not fit to hold the Licence. For this purpose the Board may take into consideration, amongst others, the provisions contained in Regulation 38.

18. Renewal of Electrical Contractor's Licence:

- 1) Every Electrical Contractor's Licence granted under these Regulations shall be renewed annually. A licence which is not renewed after expiry will become invalid from the date of expiry. Application for renewal in Form - J together with the Licence and Non-Refundable prescribed fees shall be submitted to the Secretary at least one month before the date of expiry of the Licence.

Provided that if the application for renewal as aforesaid is received within one month from the date of expiry of the Licence, it may be renewed on payment of the prescribed annual renewal fee and prescribed fee for late renewal of the Licence. The date of next expiry will be twelve months from the date of last expiry.

- 2) Electrical Contractor's Licence, which is not renewed within one month from the date of expiry, will be automatically cancelled. Fresh initial fee with an application in Form - A must be furnished as in case of fresh application before a new Licence is granted.
- 3) The Licence shall automatically become invalid after its expiry till renewal and no electrical work shall be done by the Contractor while the Licence is invalid.

19. Forms to be maintained:

All Licensed Electrical Contractors are required to maintain the following Forms and submit to the Secretary, Mizoram Electrical Licensing Board along with applications for renewal of their respective Licences.

- (a) Form - H details of Supervisor, Workman and Apprentices.
- (b) Form - I Yearly return of work done.

20. Register of Contractors:

A register of all Electrical Contractors Licence under these Regulations shall be maintained by the Secretary, Mizoram Electrical Licensing Board and published from time to time.

21. Electrical Contractor to keep instruments in good condition:

- 1) All Electrical Contractors, to whom Licences have been granted, shall keep all the prescribed instruments in good condition.
- 2) The instruments in the possession of every Licensed Electrical Contractor may be inspected from time to time by the Secretary or his representatives.

22. Notice of termination of service:

If an Electrical Supervisor/Workman in the employment of a Licensed Electrical Contractor leaves his service, the termination of the service shall be notified in writing to the Secretary, both by the Electrical Contractor and the Electrical Supervisor/ Workman.

23. Work Execution:

- a) All electrical installation works are to be carried out by Electrical Contractor having valid licence under the direct supervision of the Electrical Supervisor holding valid licence and by a Workman holding a valid permit issued by the Board.
- b) The contractor shall submit notice before commencement of work to the SDO (P&E) concerned, the Electrical Inspectorate in Form – K wherever a new work is taken up by him; provided notice for internal wiring works upto 20kw load may be given to the SDO (P&E) concerned only.
- c) No electrical installation work which has been carried out in contravention of sub-regulation (a) shall either be energized or connected to the works of any energy supplier. [Regulation 29 (2) Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulation, 2010].

24. Test Reports:

- 1) For all electrical installation works carried out as per Regulation 29 of The Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010, Test reports shall be submitted by the Licensed Electrical Contractor to the Electrical Energy Supplier/

Supplier of energy concerned in the form approved by Electrical Inspector under Regulation 31 of The Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010.

- 2) After carrying out all the necessary tests of all electrical installation works, the test report shall be filled up and signed by the Electrical Supervisor under whose supervision the works have been carried out. All the test results should be satisfactory and within permissible limits. The Test Report shall be counter signed by the Licensed Electrical Contractor.
- 3) The Licensed Electrical Contractor and Electrical Supervisor shall be jointly responsible for the due execution of all the electrical installation works and the materials used and the Electrical Supervisor shall be present at the time of testing by the Electrical Energy Supplier/Supplier of Energy concerned.

25. Examination:

- 1) Examination shall be held for Supervisors and Workman by the Board at such places and on such dates as may be notified by the Secretary from time to time in local Newspaper.
- 2) Every examination shall be of such nature as to test the practical knowledge of the candidate and to ascertain his competency and the adequacy of his practical experience to the satisfaction of the Board for the purpose of granting Permits and Certificates under these Regulations.
- 3) Every examination shall be conducted in a place where the candidate's knowledge can be practically tested and each candidate shall be tested with written and viva-voce.
- 4) The examinations and test shall be held in English or in the official Language depending upon the choice of the candidate.
- 5) The Board shall hold examinations normally twice a year on dates to be circulated by the Secretary of the Board.
- 6) The fees paid by a candidate, whose application for admission to an examination has been accepted, shall not be refunded on any account. If the candidate fails to appear in examination, fees paid will be forfeited.

26. Qualification:

To appear in the examination, a candidate should be as under –

- 1) In respect of Electrical Supervisor's Certificate:
Candidates for examination of Electrical Supervisor's Certificate shall be person who-
 - (i) have passed class X.
 - (ii) are permanent residents of Mizoram and not below 18 year of age.
 - (iii) have passed the examination for Electrical Workman and have at least 5 years practical experience, of which not less than two years should be after passing Workman's Permit Examination
- 2) In respect of Electrical Workman's Permit:
Candidates for examination of Electrical Workman's Permit shall be a person who -
 - (i) have passed class VIII
 - (ii) are permanent residents of Mizoram and not below 18 years of age
 - (iii) have worked on wiring and electrical installation work as an apprentice for at least two years under Licensed Electrical Contractor, or
 - (iv) have passed other electrical training or practical experience in electrical installation works, which is regarded, satisfactory by the Board.

27. Full Marks:

Full Marks would be as under-

- 1) For Electrical Supervisor's Certificate:
 - a. Written - 100
 - b. Viva Voce - 100
- 2) For Workman's Permit:
 - a. Written - 100
 - b. Viva Voce - 100

28. Pass Marks:

Electrical Supervisor's Certificate and Electrical Workman's permit will not be granted unless a candidate secures 50% of total marks each in written examination and viva voce.

Candidates who are exempted from written examination also have to secure at least 50% marks in viva voce.

- 1) The Board may grant Electrical Supervisor's certificate in any class commensurate with practical knowledge and experience to a candidate who holds a Degree or diploma in Electrical Engineering, Electrical & Electronic Engineering, Electronic Engineering, Mechanical Engineering, Electronic and Communication Engineering and Electronic and Telecommunication Engineering without requiring him to sit for written examination, based on viva-voce, after paying the prescribed initial fee.
- 2) The Board may also grant Supervisor's Certificate for Class-I – Class-IV to a Degree Or Diploma candidates of retired Electrical Engineers, Electrical and Electronic Engineers, Mechanical Engineering, Electronic Engineers, Electronic and Communication Engineers and Electronic and Telecommunication Engineers of P&E Department, Mizoram after passing viva-voce examination and after paying initial fee.

29. Examination for Electrical Supervisor's Certificate:

- 1) A candidate for Electrical Supervisor's Certificate examination must apply to the Secretary in prescribed form (Form-B) with the following documents and pay the examination fee:
 - i) Attested copy of Voter's ID.
 - ii) Certificate from Contractor in Form 'G' - appended to these Regulations.
 - iii) Electrical Workman's Permit, if any.
 - iv) Certificate of technical qualifications (attested copy)
 - v) Two copies of recent passport size photographs, all of which shall bear the applicant's name on the back.
- 2) Candidate for examination of Electrical Supervisor's Certificate shall be examined by a written paper and by Oral tests. Candidate will normally be examined through the medium of English language but the Board may permit a candidate to be examined through any other medium as may be possible for the Board to arrange.
- 3) The syllabus of the several parts of the examinations is set out in Annexure - II. Candidates may appear in examinations for any class. The class to be passed to qualify for different Classes of Certificates are as below:
- 4) For the purpose of these Regulations all Electrical installation works shall be divided in classes as shown below:

Classes	Certificate for	Part compulsory
Class-I	Wiring for system not exceeding 650 Volts	- 1,2,3,4
Class-II	Overhead lines and installations not exceeding 33,000volts	- 1,4,5,6,7,9
Class - III	Underground Cable not exceeding 33,000volts	- 1,7,8
Class-IV	Overhead lines and installations exceeding 33,000 volts	- 1,4,5,6,7,9,10

30. Grant of Electrical Supervisor's Certificate:

- 1) Every candidate who passed the examinations for Electrical Supervisor will be granted a certificate for the installation works of different classes which he passed as set out in Form - E, after paying the prescribed initial fee within one (1) year from the date of declaration of examination result.
- 2) The Board may also grant Electrical Supervisor's certificate in any class commensurate with practical knowledge and experience to a candidate who holds a Degree or diploma in Electrical Engineering, Electrical & Electronic Engineering, Electronic Engineering, Mechanical Engineering, Electronic and Communication Engineering and Electronic and Telecommunication Engineering without requiring him to sit for written examination, based on viva-voce, after paying the prescribed initial fee.
- 3) The Board may also grant Supervisor's Certificate for Class-I – Class-IV to a Degree or Diploma candidates of retired Electrical Engineers, Electrical and Electronic Engineers, Mechanical Engineering, Electronic Engineers, Electronic and Communication Engineers and Electronic and Telecommunication Engineers of P&E Department, Mizoram after passing viva – voce examination and after paying initial fee.

31. Renewal of Electrical Supervisor's Certificate:

- 1) Every Electrical Supervisor's Certificate granted under these Regulations shall be renewed every year or three years at a time after paying prescribed fees shown in Annexure - I. Any Certificate, which is not renewed after expiry will become invalid from the date of expiry. Application for renewal in Form - L together with the Supervisor's Certificate and non-refundable prescribed fees shall be submitted to the Secretary within one month before the date of expiry of the Certificates. Provided that if the application for renewal as aforesaid is received within twelve- months from the date of expiry of the Certificate, it may be renewed on payment of the prescribed renewal fee and prescribed fee for late renewal of the Certificate. The date of renewal after expiry will be the date on which the Certificate is renewed. The date of next expiry will be one year or three years or from the date of last expiry.
- 2) Electrical Supervisor Certificate, which has not been renewed within twelve months from the date of expiry, will be automatically cancelled and fresh initial fee with an application in Form - B must be furnished as in case of fresh application before a new Supervisor's certificate will be granted.
- 3) The Board may, at any time cancel an Electrical Supervisor's certificate if the person to whom the Certificate has been granted is in the opinion of the Board, not fit to hold such Certificate. For this purpose the Board may take into consideration, amongst other, the Provisions contained in Regulation 31.

32. Examination for Electrical Workman's Permit:

- 1) A candidate for examination of Electrical Workman's Permit must apply to the Secretary in prescribed form Form - C with the following documents and pay the examination fee:
 - i) Attested copy of Voter's ID.
 - ii) Certificate from Contractor in Form - G appended to these Regulations.
 - iii) Electrical Workman's Permit, if any.
 - iv) Certificate of technical qualifications (attested copy)
 - v) Two copies of recent passport size photographs, all of which shall bear the applicant's name on the back.
- 2) Candidate for examinations of Electrical Workman's Permit shall be examined by a written paper and by Oral tests. Candidate will normally be examined through the medium of English language but the Board may permit a candidate to be examined through any other medium as may be possible for the Board to arrange.

- 3) The syllabus of the several parts of the examinations is set out in Annexure - III. Candidates may appear in examinations for any class. The class to be passed to qualify for different Classes of Permit are as below:
- 4) For the purpose of these Regulations all Electrical installation works shall be divided in classes as shown below:

Classes	Certificate for	Part compulsory
Class-I	:Wiring for system not exceeding 650 Volts	- 1,2,3,4
Class-II	:Overhead lines & installations not exceeding 33,000volts	- 1,4,5,6,7,9
Class - III	:Underground Cable not exceeding 33,000volts	- 1,7,8
Class-IV	:Overhead lines & installations exceeding 33,000 volts	- 1,4,5,6,7,9,10

33. Grant of Electrical Workman's Permit:

- 1) Every candidate who passed the examinations for electrical Workman shall be granted a Permit for the installation works of different classes which he passed as set out in Form - F after paying the prescribed initial fee within one (1) year from the date of declaration of result.
- 2) The Board may also grant a Permit to any candidate who has passed I.T.I from any recognized institute in the trade of Electrician, Wireman, Mechanic Refrigerator and A/C, Mechanic Radio and Television, Electronic Mechanic, Information Technology and Electronic System Maintenance whose qualification and practical experience are such as to justify the grant of Workman permit of the appropriate class after passing Viva-Voce, without written examination, after paying the prescribed initial fee”

34. Renewal of Electrical Workman's Permit:

- 1) Every Electrical Workman's Permit granted under these Regulations shall be renewed every year or three years at a time after paying prescribed fees shown in Annexure -I. Any Permit, which is not renewed after expiry will, become invalid from the date of expiry. Application for renewal in Form - L together with the Workman's Permit and non- refundable prescribed fees shall be submitted to the Secretary within one month before the date of expiry of the Permit.
Provided that if the application for renewal as aforesaid is received within twelve- months from the date of expiry of the Permit , it may be renewed on payment of the prescribed renewal fee and prescribed fee for late renewal of the Permit .The date of renewal after expiry will be the date on which the Permit is renewed. The date of next expiry will be one year or three years from the date of last expiry.
- 2) Electrical Workman's Permit, which has not been renewed within twelve months from the date of expiry, will be automatically cancelled and fresh initial fee with an application in Form - C must be furnished as in case of fresh application before a new Workman's Permit will be granted.
- 3) The Board may, at any time cancel an Electrical Workman's Permit if the person to whom the Permit has been granted is in the opinion of the Board, not fit to hold such Permit. For this purpose the Board may take into consideration, amongst other, the Provisions contained in Regulation 31.

35. Grant of Duplicate Licence, Certificate or Permit:

On being satisfied that an original Licence, Certificate or Permit granted under these regulations has been lost or destroyed, the Secretary may, on request in writing by the application, grant a duplicate. A duplicate of Licence, Certificate or Permit granted under these Regulations shall be issued on payment of the prescribed fee.

36. Restriction of employment for Electrical Supervisors and Electrical Workmen:

- 1) A person holding Electrical Supervisor's Certificate should not be an employee of more than two different Electrical Licensed Contractors within the same period.
- 2) A person holding Electrical Workman's Permit should not be an employee of more than one Electrical Licensed Contractor within the same period
- 3) An Electrical Supervisor/Workman employed by a Licensed Electrical Contractor should not be a regular/Work charged/officiating/contract/muster roll employee of a Central or State Government or a Government undertaking or a regular/full time employee of any other Company or Firm or Agency.
- 4) A person holding both Supervisor's Certificate and Contractor's Licence should not be an employee of any other Contractor.

37. Report of negligence:

- 1) When a situation arises in which a Licensee or a person for whom any electrical installation work is being or has been carried out by an Electrical Contractor licensed under these Regulations, is, in the opinion of the licensee or a person, not in conformity with the Central Electricity Authority (Measures relating to safety and Electric Supply) Regulations, 2010 and Licensee or person desires to bring the facts to the notice of the Board, he shall make a report in writing to the Secretary.
- 2) A report made to the Secretary under these regulations by a person other than a Licensee shall be accompanied by a deposit of Rs. 500.00 or such larger amount as the Board may fix by special order in any case. If in the opinion of the Board, the charge contained in the report is not substantiated, the Board may direct that the deposit shall be forfeited, if the report is substantiated, the deposit shall be returned.
- 3) If electrical installation work has been being or has been carried out by Electrical Contractor licensed under these regulations is actually not in conformity with the Central Electricity Authority (measures relating to Safety and Electric Supply) Regulation, 2010, the Board may take action as deemed fit, which may entail imposition of cancellation or suspension of licence. Decision of the Board will be final.
- 4) If any person holding an Electrical Workman's Permit or a Supervisor's certificate or an Electrical Contractor's Licence is found by the Board to be guilty of negligence, misrepresentation or deliberate suppression of facts, incompetence or breach of these Regulations or of the conditions of his Permit, Certificate or Licence. The Board may take action as deemed fit which may entail suspension or cancellation of licence. The decision of the Board in these regards shall be final.
- 5) If any mutilation or defacement of, or any unauthorized entry in any Electrical Workman's Permit or Electrical Supervisor's Certificate or Electrical Contractor's Licence is found the Board may take action as deemed fit which may entail cancellation. The Board's decision will be final.

38. Electrical Licensee to obtain Contractor's Licence:

No electrical installation work shall be carried out by a person licensed under Part - IV of the Electricity Act 2003 or an Electricity Board or a State Government Department responsible for the distribution of energy, in a premises beyond the point of commencement of supply unless he has obtained an Electrical Contractor's Licence and employs staff of Electrical Supervisors and Electrical Workman in conformity with these Regulations.

39. Cancellation of Contractor's Licence granted to Electrical Licensee:

An Electrical Contractor's Licence granted under Part - IV of the Electricity Act, 2003 shall be liable to be withdrawn or cancelled if in the opinion of the Board preferential treatment resulting in unfair competition with local contractors is given to prospective consumers.

40. Amendment of Annexure:

Schedule of fees contained in Annexure-I, Syllabus for Electrical Supervisor's Certificate Examinations contain in Annexure-II, Syllabus for Electrical Workman's Permit Examinations contain in Annexure-III and Forms contained in Annexure-IV and remuneration for examiners etc may be amended by the Board from time to time.

41. General Provisions for Appeals:

- 1) An appeal against an order made under these regulations shall lie to the State Government.
- 2) Every appeal made under sub-regulation (1) shall be in writing accompanied by a copy of the order appealed against and shall be presented within 3 months of the date on which such order had been made.

42. Remuneration for Examiners and invigilators:

An Examiner shall receive the remuneration as prescribed by the State Government from time to time.

43. Mode of Contract:-

- 1) Every Electrical installation work undertaken by a Contractor shall be recorded in writing and the Contractor shall be held responsible for the workmanship and quality of all materials supplied by him and used in the work for the proper execution of the Contractor. All the installation work shall be recorded as per Form - I as prescribed in the schedule of Form and shall be opened for Inspection.
- 2) No Electrical installation works including additions, alteration repair and adjustments to existing installation, excepting such replacement of lamps, fans, fuses, switches and other components/ parts of the installations which, in no way alteration of its capacity or character, shall be commenced by a Contractor without notifying the Secretary and the Electrical Inspector having jurisdiction and the concerned Electrical supply authority in Form - K as prescribed in the form. Provided that notice for internal wiring works upto 20kW load may be given to the SDO (P&E) concerned only.

Before the commencement of the actual work, the Contractor shall obtain the approved copies of the electrical drawings (approved by the concerned Electric Supply Authority) from the occupier or owner or of Supplier of the works. The works shall be carried out in accordance with the approved drawing of the installation or the work complying with relevant provisions of the Regulations and the recommendations of the Indian Standard Code of practice.

- 3) For every Electrical Installation work carried out under regulation 29 of Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010, a Test – Report with relevant drawing shall be submitted by the Contractor to the concerned Electric Supply Authority. The test shall be carried out in the presence of the Supervisor and the Test- Report shall be signed by the Supervisor under whose supervision the work had been carried out and shall be countersigned by the Contractor. The Supervisor shall be wholly responsible for the correct execution of the electrical installation work as per the relevant provision of the Regulations and the recommendation made from time to time by the Indian Standard Institutes. In addition, the Contractor shall furnish a copy of the Test-Report to the electric supply authority as well as to the Electrical Inspector having jurisdiction. Provided that notice for internal wiring works upto 20kW load may be given to the SDO (P&E) concerned only.

44. Change of name (Firm/Body):

- 1) Any firm or body holding a Contractor's License of any class may make an application to the Secretary along with the fee prescribed in the Schedule of fees appearing in Annexure- I for effecting any change in the name of the firm or body and the Secretary may, with the approval of the Chairman, allow such change provided it does not involve any transfer of assignment of the License to any other person, firm or body.
- 2) Where any change is allowed under the preceding Sub - Regulation, the Secretary shall make endorsement to this effect under his hand and seal with date in the License as well as in the records of the Board.

45. Suspension, Revocation of certificate/Licence:

The Board may direct the suspension or revocation of a certificate/Licence/Permit, if the Board is satisfied that the holder:-

- a) has committed a breach of any of these conditions or :
- b) has committed a breach of any conditions stated in the Certificate/Licence/Permit as the case may be; or
- c) has failed to furnish any information or record to the Electrical Inspector which he has required for the purpose of satisfying himself whether any provision of the aforesaid conditions has been complied with or whether any order of the Electrical Inspector has been carried out or
- d) has been guilty of such mis-conduct as to render the suspension or revocation of the certificate/license/permit is justified and desirable in public interest or:
- e) has shown inefficiency or negligence in the execution of electrical works.

46. Board Decision to be final:

The decision of the Board in all matters relating to the examination of candidates for grant of Permit, Certificate of competency and to issue renewal, suspension and revocation of Permit/Certificate of competency/Electrical Contractor's Licence, imposition of penalty, etc. shall be final.

47. Matter not specified in the Regulation:

The Board may consider and make suitable decision in matters which are not clearly specified in the Regulation.

48. Repeal and Saving:

On and from the commencement of these regulations, The Mizoram Electrical Licensing Regulations 2003 published in the Mizoram Gazette Extra Ordinary Issue No. 243, dt 1.9.2003 under Notification No. B.16012/24/2000-P&E, dt.27.8.2003 (As amended in 2010) shall stand repealed.

Provided that any order made or anything done or any action taken under the Regulations so repealed shall deemed to have been done or taken under the corresponding provisions or these regulations.

49. Accounts :

1. The financial year of the accounts shall be from 1st April to the following 31st March.
2. The Board shall, in respect of the Licensed Contractor/Supervisor/Workman, keep such accounting records as would be required so that the revenue cost, assets, liabilities, reserve and the provisions for, or reasonably attributable to the Licensed Contractor/Supervisor/Workman are separately identifiable in the book of the Electrical Licensing Board, and
3. The Board shall, upon the request by any person/authorized body, make available a copy of each accounting statement at a price not exceeding its photo copying charges.

Secretary to the Government of Mizoram,
Power & Electricity Department,
Aizawl, Mizoram.

ANNEXURE-I
SCHEDULE OF FEES

(See regulation 15)

1. Fees for Electrical Contractor's License:

<u>Class of Contractor</u>	<u>Initial fee</u>	<u>Renewal fee</u>	<u>Late renewal fee per month</u>	<u>Duplicate License fee</u>	<u>Increase of scope fee</u>	<u>Change of name</u>
Class-I	Rs 4,000	Rs. 1,500	Rs. 500	Rs. 1,000	-	Rs. 1,500
Class-II	Rs 3,000	Rs 1,000	Rs. 500	Rs 1,000	Rs.1,000	Rs.1,500

2. Special Class (Temporary) Electrical Contractor's License:

<u>Class of Work</u>	<u>Initial Fee</u>	<u>Duplicate License fee</u>
Up to 650 V	Rs. 5,000	2,000
Above 650 v & up to 33KV	Rs.10,000	2,000
Above 33 KV	Rs.15,000	2,000

3. Fees for Electrical Supervisor's Certificate (See Regulation 29,30 & 31):

<u>Initial fee month</u>	<u>Examination fee for each class</u>	<u>Renewal fee per year</u>	<u>Late renewal fee per</u>	<u>Duplicate Certificate fee</u>
Rs.500	Rs.150	Rs.200	Rs.100	Rs.300

4. Fees for Electrical Workman's Permit (See regulation 32, 33 & 34):

<u>Initial fee</u>	<u>Examination fee for eachclass</u>	<u>Renewal fee per year</u>	<u>Late renewal fee permonth</u>	<u>Duplicate Permit fee</u>
Rs.350	Rs.100	Rs.150	Rs.100	Rs.250

Notes:-

1. An Electrical Contractor holding a valid License granted under these Regulations and desires to increase the scope of his work shall submit a fresh application in Form - A
2. Should a passed candidate desires to qualify, subsequently for a class other than that for which a certificate or permit has been granted, he will be permitted to appear in the examination for the parts concerned. Similarly, those who apply for exemption from examination and who have been granted a Permit/ Certificate for one class or more classes may apply with the requisite fee for examination in any other additional class or Classes.
3. All Fees levied under these Regulations shall be paid to the Secretary.
4. Printed copies of these regulations may be obtained from the Secretary, on payment of the cost.
5. Forms of applications may be obtained from the Secretary, Mizoram Electrical Licensing Board.

ANNEXURE-II
[See regulation 29 (3)]
SYLLABUS FOR ELECTRICAL SUPERVISOR'S CERTIFICATES EXAMINATIONS

Part-1
ELEMENTARY PRINCIPLES

- 1. Principles of Electricity:**
 Electric pressure, current and resistance, Ohm's Law, Kirchhoff's Law, calculation of voltage drop, series and parallel circuits, unit of voltage, current, resistance, power and energy, relation between electrical unit (kW) and mechanical power unit (HP), inductance, capacitance, reactance and impedance.
- 2. Electromagnetism:**
 Flux, flux density, magnetic field strength, permeability, magnetic circuits; reluctance, calculation of MMF, effect of air gap, hysteresis loop of magnetic materials, Electromagnetic Inductance, production of EMF, Fleming's Hand Rules, Faraday's Laws, Lenz's Law, Self and Mutual Inductance, Coupling coefficient, magnetic properties of materials, Electro-magnets and their applications.
- 3. Materials:**
 Conductors, non-conductors, insulators, insulating materials and their utilities, transformer oil, effect of heat and moisture on insulation, dielectric, permittivity, different types of wires, cables, switches, circuits breakers, fuses.
- 4. Generation of Electricity:**
 Method of generation of electric power, block schematic layout of generating station; Hydro - electric, Thermal and Nuclear station. Non-conventional Energy sources, solar power, wind power.
- 5. Acts and Regulations: Working knowledge of:**
 - 1) The Electricity Act, 2003.
 - 2) The Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010.
 - 3) The Mizoram Electrical Licensing Regulations, 2017.
 - 4) The relevant Joint Electricity Regulatory Commission for Manipur & Mizoram Regulations such as:
 - i)* Electricity Supply Code
 - ii)* Consumers Grievances Redressal Regulations
 - iii)* Prevailing Power Tariff.

Part-2

WIRING FOR SYSTEM NOT EXCEEDING 250 VOLTS

- 1. Domestic Installation:**
 Various types of LT wiring - cleat, casing and capping, metal sheathed, conduit, types of wires, cables and their standard sizes with current carrying capacities, estimates of materials and cost of different types of installations, load survey, connected load, maximum demand, main switch board, distribution board, location of switch board, distribution layout and circuit diagram, selection of fuses, M.C.C.B.(Moulded Case Circuit Breaker)

2. **Illumination:**
Characteristics of different types of lamps, incandescent lamps, fluorescent lamps, vapors lamps, HPSV (High Pressure Sodium Vapour), LPSV (Low Pressure Sodium Vapour), LED (Light Emitting Doide), magnetic induction lamp, energy efficient lamps, photometric unit and their measurement.
3. **Earthing :**
Resistivity of soil and their measurement, computation of earth resistance, different materials used for earthing conductors, corrosion factor, determination of size of earth bus, plate, pipe and strip earthing.
4. **Installation testing and measurement:**
Insulation tester, earth tester, ammeter, voltmeter, wattmeter, energy meter with MDI (Maximum Demand Indicator) facility, recommended value of insulation resistance, earth resistance, polarity test, continuity test, insulation test, earth resistance test, detection and location of faults.

Part-3

WIRING FOR SYSTEM NOT EXCEEDING 650 VOLTS

1. **A.C. Circuits :**
Alternating current fundamentals, generation of alternating current, different wave forms, frequency, time period, average value, rms value and form factor, phasor representation of alternating quantities, rectangular, polar and exponential forms, analysis of simple AC circuits with resistance, inductance and capacitance, concept of impedance and admittance, phasor representation, power and power factor in AC circuits, active and reactive component, solution of R-L (Resistance-Inductance), R-C (Resistance-Capacitance), and R-L-C (Resistance-Inductance-Capacitance) circuits, series, parallel and series-parallel circuits.
2. **Three phase system :**
Star and Delta connection, relationship between phase and line value of voltage and current, phase representation, solution of balance and un-balance three phase circuits.
3. **Symbols:**
List of symbols, preparation of electrical wiring diagram and electrical circuit diagrams, reading of electrical diagrams.
4. **Special types of equipments:**
X-Ray, Neon-sign, lift, escalators, cinema installation, relevant rules, circuitry, safety precaution, earthing, fire precautionary measures for the above installation. IS 4878/91-Code of practice for cinema installation.

Part-4

AC & DC APPARATUS NOT EXCEEDING 650 V

1. **AC Generators (Alternators) :**
Basic principles, detail construction and essential component, voltage regulation, method of voltage control and frequency control, synchronizing of alternators, syncroscope, bright lamp and dark lamp method, associated switch board and its accessories.

- 2. DC Generators:**
Basic principles, detail construction and essential component, shunt, series and compound generators and their characteristics, commutators and their maintenance, carbon brushes-their adjustments and care, voltage regulation, parallel operation, associated switch board and its accessories.
- 3. Batteries:**
Primary cell, dry cell, Lead acid and Nickel-Cadmium batteries, construction, characteristic, charging and discharging. Charging circuits and their calculation, series and parallel circuits. Specifications, maintenance, storage of batteries, use of hydrometers, battery charging equipment and their operation.
- 4. AC Motors:**
Three phase induction motors, construction principle of operation speed, frequency, slip, star-delta starting. Single phase induction motors, construction, different method of starting. Squirrel cage induction motors, slip ring induction motors. Synchronous motors, general principle of operation, uses, installation method of starting and speed control and reversal of direction, commutator motors.
- 5. DC Motors :**
Motor principle, series, shunt and compound wound type motor, their uses, installation, method of starting, speed control, reversal of direction.
- 6. Control Gears:**
Various type of switches, fuses, starters, controllers, regulators-their uses and installation. Earthing of motors and generators.
- 7. Conversion:**
Principle of operation of motors and generators. Rotary or Synchronous converters. Mercury-Arc rectifiers, inverters. Thyristors and other static devices. Filtering-Half wave, Full Wave, Bridge rectifier.

Part-5

OVERHEAD LINES NOT EXCEEDING 650 VOLTS

- 1. Construction of lines:**
Construction of low and medium voltage lines, size of conductor, length of span, sags, strength of poles, different types of poles. Spacing of conductors, cross arms, effect of temperature, wind pressure, ice and snow. Tension of wire, insulators, bracket, stays, struts, guard wires, protective device. Earthing, lightning arrestors and lightning conductors and their testing.
- 2. Operation:**
Testing and fault location, methods of working on overhead lines, inspection of distribution lines. Three wires and four wires system. Power in three phase system. Phase sequence. Measurement of active and reactive power in single phase and three phase system.
- 3. Clearances:**
Statutory clearances of live parts from ground and building. Sectional clearances, equipment clearances. Clearance of switch board, oil containing equipment, indoor and outdoor equipment clearances.

Part-6**OVERHEAD LINES NOT EXCEEDING 33,000 VOLTS****1. Construction of lines:**

Construction of high voltage lines. Sizes of conductor with current carrying capacity. Length of span, sags, strength of the poles, different type of poles. Design of different type of tower and their construction, erection and stringing of conductor. Spacing of conductor, cross arm, effects of temperature, wind pressure, ice and snow. Tension of wires, insulators, vibration dampers, brackets, stays, struts, guard wires, protective devices. Earthing, lightning arrestor and lightning conductors, and their testing.

2. Clearance:

Statutory clearance of the live parts from ground and buildings. Sectional clearance, equipments, oil containing equipments. Indoor and outdoor equipment clearance.

3. Operation:

Methods of working on over head lines. Equipments used for replacement of insulators, their rating, method of replacement of insulators. Inspection of Transmission lines. Line constants, determination of voltage drop. Voltage regulations. Effect of power factors and their improvement.

4. Transmission:

Bulk Transmission of electric power. Typical power transmission scheme. Need for high transmission voltage. Primary and secondary transmission systems.

Part-7**UNDERGROUND CABLES FOR VOLTAGE UP TO 650 VOLTS**

Basic knowledge of different types of cables- PVC (Poly Vinyl Chloride), APVC. General practical knowledge of laying cables; direct in ground, in troughs and in pipes, handling, bending, jointing, plumbing. Underground and above ground junction boxes. Distribution boxes and pillars. Joint box compounds, melting of compounds, fillings boxes with compounds.

Part-8**UNDERGROUND CABLES FOR VOLTAGE UP TO 33,000 VOLTS**

Basic knowledge of different type of cables-AYFY, XLPE (Cross linked Poly Ethylene), oil filled, gas filled and any other types. Testing and fault location, Murray Varley loop tests. Current ratings- short time ratings and continuous rating. Derating factors of cables. Calculation of voltage drop. Aluminium and copper cable jointing- types, precaution, termination. I.S. Regulations regarding cables.

Part-9**INSTALLATIONS NOT EXCEEDING 33,000 VOLTS****1. Switch Gear and Protection:**

Knowledge of various type of switches, protective fuses. Circuit breakers- OCB (Oil Circuit Breaker), VCB (Vacuum Circuit Breaker), ACB (Air Circuit Breaker), MCCB (Moulded Case Circuit Breaker), SF₆ (Sulphur Hexa Flouride) Breakers, thermal and magnetic release Relays,

Buchholtz Relays, IDMT (Inverse Definite Minimum Time Relay), Instantaneous type. Over current, earth fault and earth leakage relays, time and current setting. HRC fuses, paper barrel and HV fuse-use and construction. Lightning arresters, isolators Bus bar, D.O. (Drop-Out)cum Gang Switch, hook sticks. Earthing of Sub-Stations.

2. Transformers:

Transformers – construction, use and maintenance. Voltage and current relations. Losses and efficiency. Parallel operation of three phase transformers. Three phase transformer connections- Star/Star, Delta/Delta, Star/Delta, Delta/Star. Auto transformers, transformer tapplings.

3. Instrument Transformers:

Current transformers (CT); specifications and error factors. Potential transformers (PTs).

4. Selection of Equipments:

Different types of breakers- OCB, VCB, ACB, MCCB, MCB, SF₆ Breakers. Contactors, Breaking capacity, Making Capacity, Selection of Breakers. Selection of switches; Short time and continuous ratings. Power Factor correction by capacitors. Shunt Reactors.

5. Connections:

Method of connection of special type Transformers, Rectifier transformers. Welding transformers. Determination of capacity, load segregation, Double bus system. Change over arrangements. Preparation of schematic diagram of Sub- Station.

6. Energy Measurements:

Measurement of power, Watt meters, Energy meters, Trivector meters. Computation of Energy.

7. Clearances:

Statutory clearances of live parts from ground. Sectional clearances, equipment clearances. Clearances of oil containing equipments.

Part – 10

VOLTAGE RANGE: EXCEEDING 33,000VOLTS

Type of installation : Overhead lines and installations a voltages exceeding high pressure 33,000 volts.

1. General :

Knowledge of conductors, supports, cross arms, insulators and other lines accessories used in H.T. Line constructions, application and uses, making bills of materials, basic knowledge of common types of rating of transformers used in power supply system- types, rating, used of common Sub-Station equipment such as circuit breakers, distribution pillars, lightning arrestors, bushing for transformers and other equipment, CTs and PTs.

2. Construction :

Methods of construction of overhead line exceeding 33,000 volts; conductor, jointing, jumpering and knowledge of configuration of conductors, clearances, sag, spans etc. installation of pole and floor mounted transformers and associated sub-station equipment, installation of circuit breakers, isolators, gang operated switches and fuses, etc.

3. **Service connection at high Voltage:**
Use and installation of CTs & PTs for High Pressure Metering.
4. **Testing :**
Methods of testing overhead lines and sub-station equipments, fault testing, location and rectification.
5. **Earthing:**
Knowledge of practices and procedures of earthing for H.T. (High Tension) Overhead line equipment and sub-stations.
6. **Working procedures :**
Line clearance procedures – safe working practices for High Voltage overhead line installations, intimate knowledge of electrical shock treatment methods and procedures.
7. **Maintenance :**
Methods of maintenance of overhead lines, sub-stations, sub-station equipment, transformers - oil testing and filtration.
8. **Regulations and codes of practice:**
Familiarity with the relevant Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 and National Codes of practice, R.E.C. standards and Codes of practice.

ANNXURE-III

[see regulation 32 (3)]

SYLLABUS FOR ELECTRICAL WORKMAN'S PERMIT EXAMINATIONS

Part-1

ELEMENTARY PRINCIPLES

1. **Principles of Electricity:**
Concept of voltage, current, resistance, inductance, capacitance, reactance, power, energy and power factor. Comparison between series and parallel connection of loads. Simple calculation of current, power energy and voltage drop. Units of voltage, current, resistance, power and energy.
2. **Materials:**
Properties of conductors, non- conductors and insulators. Properties of copper and aluminum conductor. Insulating materials and their utilities such as PVC, rubber and porcelain. Different types of wires, cables, switches, circuit breaker, fuses.
3. **Drawing and Circuits:**
Reading of schematic diagram for internal wirings and control circuits. Standard symbols of various types of electrical equipments. Wireman tools and accessories.
4. **Safety measures:**
Safety measures to be observed while working on live parts. Devices used for wireman's safety. Action to be taken in case of electrical accidents.
5. **Rules and standards:**
Knowledge of prevailing power tariff. Procedure for availing electric supply to consumers. Submission of test reports/Completion reports.

Part-2
WIRING FOR SYSTEM NOT EXCEEDING 250 VOLTS

- 1. Domestic installations:**
Various types of wiring – cleat, casing and capping, metal sheathed, conduit. Types of wires, cables and their standard sizes with current carrying capacities. Main switch board, distribution boards, location and clearance of switchboards. Distribution layout and circuit diagram. Different types of fittings, and switches; use of test lamp. Connection and diagram of distribution boards, ceiling rose, plugs and sockets, lamp holders- incandescent and fluorescent lamps, fans with regulators, two way switches.
- 2. Protection :**
Overload protection, earth leakage protection, permissible load, selection of fuses-rewirable and HRC (High Rupturing Capacity) types. Circuit Breakers, M.C.C.B.
- 3. Illumination:**
Characteristics of different types of lamps. Incandescent lamps, fluorescent lamps, compact fluorescent lamps (CFL), LED.
- 4. Earthing :**
Earthing of systems. Necessity of earthing .Types of earthing. Selection and location of earthing .Types of size of earthing conductor.
- 5. Installation testing and measurements:**
Insulation tester, Earth tester, energy meter with MDI. Recommended values of insulation resistance, earth resistance. Polarity test, Continuity test, Insulation test, Earth resistance test.

Part-3
WIRING FOR SYSTEM NOT EXCEEDING 650 VOLTS

- 1. Three phase system:**
Relationship between phase and line values of voltage and current. Wiring of three phase system. Star and delta connection. Selection and identification of different cables and conductor. Protective system used in internal wiring. Use of bell and battery for sorting out in circuits. Method of testing polarity and phasing out circuits.
- 2. Jointing and soldering:**
Making straight and T joints in solid and stranded conductors and soldering them. Soldering plugs and sockets, wires and cables and insulating them.
- 3. Symbols:**
List of symbols. Preparation of simple electrical wiring diagrams and electrical circuit diagrams. Reading of simple electrical circuit diagrams.
- 4. Tariffs:**
Knowledge of prevailing power tariff.
- 5. Special type of equipments:**
X-Ray, Neon- sign, lift, Escalators, Cinema installations: Circuitry, Safety Precaution, Earthing, Fire Precaution measure for the above installation. Wiring of special equipment like UPS, Inverters, Stand by for computers, etc. Essential factor for wiring High Rise Building.

Part-4**AC & DC APPARATUS NOT EXCEEDING 650V**

1. **AC&DC Generations:**
Basic principle, construction and components. Commutators and their maintenance. Carbon brushes-their adjustments and care.
2. **Batteries :**
Primary cell, Dry cell, lead acid and Nickel – Cadmium batteries; constructions, charging and discharging. Maintenance of storage of batteries. Use of hydrometers.
3. **AC Motors:**
Three phase induction motors, construction, principle of operation. Starters- Direct on line and star- Delta starting. Single phase induction motors-construction. Different types of fan regulators-resistant and electronic types. Principle of operation of fractional Horse Power motors used in appliances, such as mixers, washing machines, etc.
4. **DC Motors:**
Motor principle, their uses, installations, methods of starting, reversal of direction.

Part-5**OVERHEAD LINES NOT EXCEEDING 650 VOLTS**

1. **Construction of lines:**
Construction of low and medium voltage lines, use of safety and protective devices. Size of conductor, length of span, sags. Different types of poles, pole concreting and erection. Spacing of conductors, fixing of cross arms. Jointing and binding of conductors. Fitting of different types of insulators, brackets, stays, struts, guard wires. Earthing of overhead lines, fitting of lightning arrestors and lightning conductors and their importance, service connections.
2. **Operation:**
Methods of working on overhead lines. Inspection of distribution lines. Three wire and four wire systems.
3. **Clearances:**
Statutory clearances of live parts from ground and buildings. Sectional clearances, equipment clearances. Clearance of switch boards.

Part-6**OVERHEAD LINES NOT EXCEEDING 33,000 VOLTS**

1. **Construction of Lines :**
Construction of high voltage lines. Use of safety and protective devices. Sizes of conductor, length of span, sags. Different types of poles, strength of poles, pole concreting and erection. Spacing of conductors, tension of wire, fitting of cross arms, fitting of insulators, vibration damper brackets, fitting of stays, struts, guard wires. Earthing, fitting of lightning arrestors and lightning conductors and their testing.
2. **Clearances :**
Statutory clearances of live parts from ground and buildings. Sectional clearances, equipment clearances. Clearance of oil containing equipments.

3. Operation:

Methods of working on overhead lines. Equipment used for replacement of insulators, their ratings. Methods of replacement of insulators.

4. Transmission:

Bulk transmission of electric power. Typical power transmission scheme. Need for high transmission voltage.

Part-7**UNDERGROUND CABLES FOR VOLTAGE UP TO 650 VOLTS**

Basic knowledge of different types of cables- PVC, APVC. General practical knowledge of laying cables direct in ground, in troughs and in pipes, handling, bending, jointing, plumbing. Underground and above junction boxes. Distribution boxes and pillars, joint box compounds, melting of compounds, filling boxes with compounds.

Part-8**UNDERGROUND CABLES FOR VOLTAGE UP TO 33,000 VOLTS**

Basic knowledge of different types of cables – AYFY, XLPE, oil filled, gas filled and any other types. Current rating – short time rating and continuous rating. Calculation of voltage drop. Aluminium and copper cable jointing- types, precautions, termination. I.S. Regulations regarding cables.

Part-9**INSTALLATIONS NOT EXCEEDING 33,000 VOLTS****1. Switch Gear and Protection:**

Knowledge of various types of switches, protective fuses, circuit breakers- OCB, VCB, ACB, MCCB, MCB, SF₆ Breakers. Over current, earth fault and earth leakage relays and their settings. HRC fuses, paper barrel and fuses – use and construction. Lightning Arresters, isolators, bus bar, D.O. cum Gang Switch, hook stick. Earthing of sub-stations.

2. Transformers:

Transformers- construction, use and maintenance. Voltage and current relation. Three phase transformer connections- Star/Star, Delta/Delta, Star/Delta, Delta/Star. Transformer tapplings.

3. Instrument Transformers:

Current transformers, CT specification. Potential Transformers, PTs.

4. Energy Measurements:

Measurement of power, Watt meters, Energy meters, Trivector meters. Computation of energy.

5. Clearances:

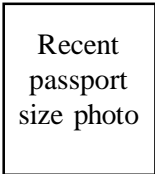
Statutory clearance of live parts from ground. Sectional clearance, equipment clearance. Clearance of oil containing equipment.

Part – 10
VOLTAGE RANGE : EXCEEDING 33,000 VOLTS.

Types of installation :Overhead lines and installations at voltages exceeding 33,000 volts.

- 1. General:**
Knowledge of conductors, supports, cross arms, insulators and other line accessories used in H.T.line constructions, application and uses, making bills of materials. Basic knowledge of common types and rating of transformers used in power supply system-types, ratings and use of common sub-station equipments such as isolators, circuit breakers, distribution pillars, lightning arrestors, bushing for transformers and other equipment –CTs and PTs.
- 2. Construction:**
Methods of construction of overhead lines exceeding 33,000 volts, conductor, jointing, jumpering and knowledge of configuration of conductors, clearances, sag, spans etc. erection of poles and floor mounted transformer and associated sub-station equipment, installation of circuit breakers, isolators.
- 3. Service connection at high voltage :**
Use and installation of CTs & PTs for high pressure metering.
- 4. Testing :**
Methods of testing overhead lines and sub-station equipment, fault testing, location and rectification.
- 5. Earthing :**
Knowledge of practice and procedures for H.T. overhead line equipment and sub-stations.
- 6. Working procedure :**
Line clearance procedures- safe working practice for high voltage over head lines installation. Intimate knowledge of Electrical shock treatment methods and procedures.
- 7. Maintenance :**
Methods of maintenance of overhead lines, sub-station, sub-station equipment, transformer -oil, testing and filtration.
- 8. Regulations and Code of practice:**
Familiarity with the relevant Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 and National Codes of practice, R.E.C. standards and code of practice.

ANNEXURE-IV
FORMS
FORM-A
[See regulation 15]



APPLICATION FOR ELECTRICAL CONTRACTOR'S LICENCE
(For new Licence/Special Class/Increase in scope of work)

1. Name of firm in which an Electrical Contractor's License is applied :
2. Business address with phone number :
.....
3. Full name of the proprietor (in capital letters) :
4. Home address with phone number:
5. Date of Birth of proprietor : Date..... Month Year.....
(Attested photocopy to be enclosed for Proof of age)
6. Class of License applied for Class-I or II/Special Class :
7. Previous License No., if any :
8. a) Existing class of work
b) Increase in scopes of work applied for
9. **For Special Class Electrical Contractor's License only**
a) Name and location of work for which the License is applied for :
b) Expected duration of completion of the work
c) Duration / period for which License is required
10. Details of Electrical Supervisors holding valid certificate in the employ of the applicant : 1) Name
Certificate No.....
Date of expiry:.....
11. Details of Electrical Workmen holding valid permit in the sole and whole time employ of the applicant : 1) Name:.....
Permit Number:.....
Date of expiry:.....
2) Name:.....
Permit Number:..... Date of expiry:.....

12. Paid Rs vide receipt No..... Dt...../...../... to the Secretary

13. Instrument in my possession are as follows:

Sl. No	Name of instrument	Maker's name	Serial number	Remarks
1	2	3	4	5

I.....hereby declare that the particulars stated above are correct to best of my knowledge. I fully understand the Terms and Conditions under which an Electrical Contractor's License is granted, a breach of which will render the license liable to cancellation.

Signature

Date

Name:.....

Note:

- 1) The applicant shall submit attested photocopy of Voters ID Card/Electricity Bill/ Telephone Bill/ Bank Pass Book/Ration card for proof of address.
- 2) Any person who make or assist in making false representation for the purpose of obtaining an Electrical Contractor's License himself is liable to be prosecuted.
- 3) Two copies of recent passport size photographs of the applicant should accompany the application

DECLARATION BY ELECTRICAL SUPERVISOR

This is to declare that I (name in capital letters) holding valid Electrical Supervisor's Certificate Nois not regular/work-charged/officiating/contract/ muster roll employee of any Government Department/undertaking or regular or full time employee of any company or firm. I am willing to work under (name or firm)s.....as an Electrical Supervisors.

Signature

Date:.....

Full name.....

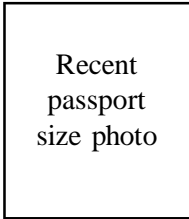
DECLARATION BY ELECTRICAL WORKMAN

This is to declare that I (name in capital letters) holding valid Electrical Workman Permit No.....is not a regular/work-charged/contract/ muster roll employee of any Government department/Undertaking or a regular or full time employee of any company or firm. I am willing to work under (name of firm) M/s.....as an Electrical Workman.

Signature

Date.....

Full Name.....



FORM-B
[See regulation 29 (1)]
APPLICATION FOR ELECTRICAL SUPERVISOR'S CERTIFICATE EXAMINATION

1. Full name of the applicant (in capital letters) :.....
2. Father's name :.....
3. Date of birth : Date..... Month Year.....
4. Permanent address in full :.....
with phone no
5. Present address in full with phone no. :.....
6. Details of technical qualification :.....
7. Fees payable: 1) Initial fee – Rs. 500.00
2) Examination fee Rs.150 for each class: Receipt No.....dt.....
8. Class for Examination :.....

I hereby declare that the particulars stated above are correct and true to the best of my knowledge and believe.

Date.....

Signature of Applicant

Note:

- 1) Attested copy of document showing date of birth should be submitted with the application.
- 2) Attested copy of the technical qualification to be submitted with the application.
- 3) Original copy of the certificate should be produced at the time of interview.
- 4) Two copies of recent passport size photographs of the applicant with name and signature on the back should accompany the application.
- 5) Any person making false statement shall render himself liable for prosecution.
- 6) Selected Candidates will have to pay initial fee for obtaining Supervisor's Certificate.

INCOMPLETE APPLICATION WILL BE REJECTED.

FORM-C
[See regulation 32 (1)]

**APPLICATION FOR ELECTRICAL WORKMAN'S PERMIT
EXAMINATION**

Recent
 passport
 size photo

1. Full name of the applicant (in capital letters) :.....
2. Father's name :.....
3. Date of birth : Date.....Month..... Year.....
4. Permanent address in full with phone no :.....
5. Present address in full with phone no. :.....
6. Details of technical qualification :.....
7. Fees payable :
 1) Initial fee – Rs.350.00
 2) Examination fee Rs.100 for each class
 Receipt No..... dt.
8. Class for Examination :.....

I hereby declare that the particulars stated above are correct and true to the best of my knowledge and believe.

Date.....

Signature of Applicant

Note:

- 1) Attested copy of document showing date of birth should be submitted with the application.
- 2) Attested copy of the technical qualification to be submitted with the application.
- 3) Original copy of the certificate should be produced at the time of interview.
- 4) Two copies of recent passport size photographs of the applicant with name and signature on the back should accompany the application.
- 5) Any person making false statement shall render himself liable for prosecution.
- 6) Selected Candidates will have to pay initial fee for obtaining Supervisor's Certificate.

INCOMPLETE APPLICATION WILL BE REJECTED.

Form D
(See Regulation 16)
Sample of Electrical Contractor's Licence
Front Page

GOVERNMENT OF MIZORAM MIZORAM ELECTRICAL LICENSING BOARD ELECTRICAL CONTRACTOR'S LICENSE No. MELB/C-...../...../.....	
Firm	:
Proprietor	:
Date of birth	:/...../.....
Address	:
Valid up to	:/...../20.....
	Recent passport size photo with

Back page

CLASS AUTHORISED TO WORK
Secretary MIZORAM ELECTRICAL LICENSING BOARD

Note :-

In case of new Electrical Contractor License, Secretary will issue after obtaining approval of the Chairman through file.

Form E

[see regulation 30 (1)]

**Sample of Electrical Supervisor's Certificate
Front Page**

GOVERNMENT OF MIZORAM MIZORAM ELECTRICAL LICENSING BOARD ELECTRICAL SUPERVISOR'S CERTIFICATE	
MELB No /S/...../.....	
Name	:
Date of birth	:/...../.....
Address	:
Valid up to	:/...../20.....
	Recent passport size photo with signature

Back page

CLASS AUTHORISED TO WORK
Secretary MIZORAM ELECTRICAL LICENSING BOARD

Form F
[see regulation 33 (1)]
Sample of Electrical Workman's Permit

Front Page

GOVERNMENT OF MIZORAM MIZORAM ELECTRICAL LICENSING BOARD ELECTRICAL WORKMAN'S PERMIT N0.MELB/W/...../.....	
Name	:
Date of birth	:/...../.....
Address	:
Valid up to	:/...../20.....
	Recent passport size photo signature

Back page

CLASS AUTHORISED TO WORK
Secretary MIZORAM ELECTRICAL LICENSING BOARD

Form G

[see regulation 32(1)(ii)]

Certificate to be granted to Electrical Staff for admission to Electrical Workman's and Electrical Supervisor's examination.

1. Name of Employee (in capital letters) :
2. Date of Employment :
3. Date of discharge, if discharged :
4. Nature or Work in which engaged :
5. Skill in the work in which engaged :
6. Conduct :
7. General Remarks :

I here by declare that the particulars stated above are correct and true to the best of my knowledge.

Date:.....

Signature of Employee / Licensed
Electrical Contractor
Seal

Note :-

- 1) This Certificate should be granted only to persons who are or have been actually employed on Electrical Wiring and installation works and whose names are entered in the register of wiring staff in Form - H maintained by every Licensed Electrical Contractor.
- 2) Issue of false Certificate will render the Licensed Electrical Contractor and the person concerned liable for action against them.
- 3) The employer or the Licensed Electrical Contractor shall, if required by the Secretary, be responsible for producing documentary evidence regarding the applicant's employment.

Form-H
[See regulation 19]

Detail of Electrical Supervisor, Workman & Apprentices

Name of Contractor :

License No :

Period from Dt./...../..... to Dt./...../...

Sl.No	Name of Employee	Permit/ Certificate Number if any	Date of Employment	Date of Discharge	Remarks
1					
2					
3					
4					
5					
6					

Place:
Date...../...../.....

Signature of Contractor
Seal

Form –I
Return of Work Done
 [See regulation 19]

Name of Contractor :

License No :

Period from Dt. to Dt.

Sl.No	Name of work with address/ location	Name of supervisor with certificate No	Name of Workman With permit No	Date of Completion	Total Load	Test report Submitted to
1	2	3	4	5	6	7

Place :

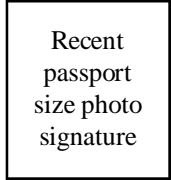
Date :/...../....

Signature of contractor

Seal

Form J
[See Regulation 18 (1)]

**APPLICATION FOR RENEWAL OF ELECTRICAL
CONTRACTOR'S LICENCE**



- 1. Name of Applicant (in Capital) :
- 2. Detail Address with phone Number :
- 3. Name of firm :
- 4. License Number :
- 5. Date of Expiry :
- 6. Name of Supervisor with Certificate no :
- 7. Name of Workman with permit Nos. :
- 8. Renewal fee: (as per Schedule of fees) :
- 9. Late Renewal fee, if any (as per Schedule of fees)

10. Enclosures:

- 1. Form - H. List of employee
- 2. Form – I. Return of Work Done

Date

Signature of Contractor
Seal

Form – K
Notice before Commencement of works
 [See Regulation 23(b)]

Work SI/no : Date :

1. Name of Contractor :
2. License no :
3. Detail of work to be done
(Attach electrical Drawing) :
4. Full address work to be done :

5. Tentative date of starting work :
6. Expected date of completion of the work :
7. Name of supervisor with certificate No :
8. Names of workman with permit no :

Date/...../.....

Signature of Contractor
with seal.

Note:-

The contractor shall submit copy of this Notice before commencement of work to the S.D.O. (P&E) concerned, the Electrical Inspector and the Secretary M.E.L.B. whenever a new work is taken up by him except for I phase and III phase internal wiring of load up to 20 KW.

Notice for internal wiring works up to 20 kW load maybe given to the S.D.O. (P&E) concerned only.

FORM – L

**[see regulation 31(1), 34(1)]
APPLICATION FOR RENEWAL OF SUPERVISOR’S
CERTIFICATE
&
WORKMAN’S PERMIT**

Recent
passport
size photo
signature

- 1. Name of Applicant(in capital letters) : _____
- 2. Detail Address with phone number : _____

- 3. Certificate/Permit Number : _____
- 4. Date of Expiry :Dt___/___/___
- 5. Present occupation with Address : _____
: _____
: _____
- 6. Renewal fee (as per Schedule of fees) _____
- 7. Late renewal fee, if any (as per Schedule of fees) _____

Date:_____

Signature of Applicant