

SYLLABUS FOR DIRECT RECRUITMENT TO ELECTRICIAN GRADE-II UNDER PWD

Paper	Subject	Marks	Duration
Paper-I	General Knowledge (25 questions)	50	3 hours with additional time of 20 minutes for Visually handicapped/ Cerebral palsy candidates
	General English (20 questions)	40	
	Essay writing	20	
	English Comprehension	20	
	Simple Arithmetic (20 questions)	40	
	Basic Computer Knowledge (15 question)	30	
	Total	200	
Paper-II	Safety (5 questions)	10	3 hours with additional time of 20 minutes for Visually handicapped/ Cerebral palsy candidates
	Basics of Electrical (20 questions)	40	
	Wiring & Circuits (40 questions)	80	
	Cells & Battery (15 questions)	30	
	Wiring systems & Measuring Instruments (20 questions)	40	
	Total	200	
Paper-III	Measurement & Components (25 questions)	50	3 hours with compensatory time of 20 minutes per hour for person with benchmarked disabilities
	Control & Motors (20 questions)	40	
	Energy sources & transmission (15 questions)	30	
	Electrical machine (20 questions)	40	
	Winding (20 questions)	40	
	Total	200	

Notes:

- 1) Questions shall be set in Objective Type Multiple Choice pattern only except for essay writing and English comprehension under Paper-I with all questions carrying equal marks and answers for each of the questions shall be marked using blue or black ball point pen. In other words, there shall be multiple probable answers (at least four) wherein the candidate has to choose the correct answer for every objective type question. Overmarking / overwriting answer shall be considered as wrong answer.
- 2) Questions will be set in tune with the level of educational qualifications prescribed in the corresponding Recruitment Rules/Service Rules for the post(s).
- 3) A brief description of the common syllabus for direct recruitment to Electrician Grade-II is as follows:

Paper-I

General Knowledge: Questions will be designed to test the candidate's knowledge of current events and of such matters of everyday observation and experience as may be expected of an educated person. The test will also include questions relating to Indian history and culture, Indian polity including the Constitution of India, geography, economy and general science. Questions on Mizo history and culture will also form part of the syllabus.

General English: Questions in this components will be designed to test the candidates understanding and knowledge of English language and will be based on error recognition, fill in the blanks (using verbs, preposition, articles etc), vocabulary, spellings, grammar, sentence structure, synonyms, antonyms, sentence completion, phrases and idiomatic use of words etc.

Essay Writing: Question on essay writing will be designed to test the candidate's grasp of his material, its relevance to the subject chosen, and to his ability to think constructively and to present his ideas logically, constructively and concisely.

English Comprehension: There will be questions on comprehension of passages also to test the vocabulary, grammar, logical thought ability and overall grasp of the candidates over English language.

Simple Arithmetic: Number system, simplification, roots, averages, discounts, percentages, profit & loss, ratio and proportion, partnership, chain rule, time & work, time & distance, simple & compound interest, mensuration, permutations & combinations, heights & distances, line graphs, bar graphs, pie charts and tabulation.

Basic Computer knowledge: Introduction to Computers, introduction to Graphical user interface based Operating System, elements of Word Processing, Spreadsheets, Power point presentations, Computer communication and internet, world wide web and web browser, communication and collaboration.

Paper-II (Technical Paper)

Safety: Safety practices - safety rules, first aid, hazard identification and prevention, Factory and personal safety, response to emergency, safety signs fire and fire extinguishers.

Basics of electrical: Concept of standards and trade tools- understanding BIS/ISI standards, trade tool specifications, Electrical code- overview of electrical code, Allied trades- introduction to fitting, tools, description and specifications of various tools, Fundamentals of electricity- definitions, units and effects of electric current, conductors, insulators, and semiconductors their description, work power energy.

Wiring and circuits: Soldering and joints- techniques of soldering, various joints in electrical conductors, Underground cables- description, types, joints and testing procedures, cable insulation and voltage grades, Electrical circuits - ohm's law, Kirchhoff's laws and circuit problems, series, parallel circuits, and open/short circuits in series and parallel networks, Resistance and resistors- laws of resistance; types of resistors, method of measurement of resistors such as ammeter-voltmeter method, Wheatstone bridge etc., Magnet descriptions types, magnetic terms, magnetism, faradays laws of electromagnetic induction Lenz law, and induced emf, inductors, electro magnetism terms, eddy current and hysteresis, Capacitors - capacitor types and functions, grouping and uses, Fundamental of AC and AC circuits- AC and DC, advantages of DC and AC systems, frequency, waveforms etc., RL, RC, RLC, series and parallel AC circuits, Poly-phase systems- star-delta connections and phase sequences, power and power factor, power and energy measurement.

Cells and Battery: Chemical effect of current and cells- explanations of anode and cathode, law of electrolysis, types of cell, advantage and disadvantage and their application, grouping of cell, Battery- description, principle of operation and components, types, care and maintenance and testing, electroplating and cathodic.

Wiring systems and Measuring Instruments: Electrical wiring - i.e, rules on electrical wiring, types of domestic and industrial wirings, Wiring system and method, wiring accessories, planning, and load estimation, Earthing- importance, methods, measurement of earth resistance and leakage circuit breaker, Illumination- laws of illuminations, illuminations terms, types of illumination, calculations, lamps and fitting, Electrical instruments- classification and usage of instruments, measurement of electrical parameters, errors and calibration

Paper-III (Technical Paper)

Measurement and components: Domestic equipment, descriptions - working principles of domestic appliances; neutral and earth concepts, Transformers - descriptions definitions, working principles, construction type, emf equation, transformation ratio test losses efficiency, regulation, safety devices, parallel operation, connection of 3 phase transformers, auto transformation, CT&PT their description, Electronics components - construction and description - diode, transistor, thermistor, resistor, SCR, DIAC, TRIAC and IGST, oscilloscope working principles.

Control and motors: Control circuits - layout drawing understanding; control elements, wiring accessories, and testing, Motor control- ac/dc drive applications, 3-phase motor speed control using vvvf/ac drive, Power control- voltage stabilizer, battery charger, emergency light, inverter, and UPS.

Energy sources and transmission: Energy sources - conventional and non-conventional sources; power generation by thermal, hydel, solar, and wind, Transmission and distribution- networks, insulators, and conductor joining methods; safety precautions and ie rules for domestic service connections, Protection systems - types of relays, circuit breakers, and arc quenching.

Electrical machines: Ac and Dc generator and motor - construction, working principal, types, applications, Characteristics, starter and speed control method.

Winding: AC winding - terms, types, testing, winding material, DC winding - terms, types, testing, winding material.