

MEGHALAYA ENERGY CORPORATION LIMITED

CORPORATE AFFAIRS

Lumjingshai, Short Round Road, Shillong – 793001

CIN-U40101ML2009SEC008374

No.MeECL/CA/Recruitment/219/2015/9

Dated :Shillong, the 20th October, 2015

ADVERTISEMENT NOTICE

The Meghalaya Energy Corporation Limited (MeECL), Corporate Affairs, invites application for the following posts.

1. 4 (Four) post of Assistant Engineer (Electronics)
2. 2 (Two) post of Junior Engineer (Civil)
3. 12 (Twelve) post of Junior Engineer (Electrical/Mechanical).

Interested applicants are requested to log on to the MeECL official website www.meecl.nic.in for details.

However, the MeECL reserves the right to reject the applications of any or of all the candidates without assigning any reason thereof and to cancel the Advertisement without assigning any reason thereof

Sd/-
(D. Warjri)
Deputy Secretary

Memo No.MeECL/CA/Recruitment/219/2015/9 (A)

Dated :Shillong, the 20th October, 2015

Copy to :-

1. The P.S. to Chairman-cum-Managing Director for kind information of Chairman-cum-Managing Director.
2. The Chief Executive Member, KHADC, Shillong/ JHADC, Jowai/GHADC, Tura.
3. The Director (Finance), MeECL, Shillong.
4. The Director (Distribution), MePDCL, Shillong.
5. The Director (Generation) MePGCL, Shillong.
6. The Director (Transmission), MePTCL, Shillong.
7. All Deputy Commissioners, East Khasi Hills District,Shillong/West Khasi Hills District, Nongstoin/ South West Khasi Hills District, Mawkyrwat/Ri-Bhoi District, Nongpoh/, East Jaintia Hills District, Khliehriat/ West Jaintia Hills District, Jowai/, West Garo Hills District, Tura, /East Garo Hills District, Williamnagar,/ South Garo Hills District, Baghmara/North Garo Hills District, Resubelpara/South West Garo Hills District, Ampati.
8. The Director of Information & Public Relation (DIPR), Government of Meghalaya, Shillong with a request to kindly publish the Advertisement in two issues of the Shillong Times, Shillong and Tura edition, U Mawphor, Kjatsngi and SalantiniJanera.
9. The Employment Officer, Employment Ex-change, Shillong/,Nongstoin/ Mawkyrwat/ Nongpoh/, Khliehriat/ Jowai/Tura/ Williamnagar,/ Baghmara/ Resubelpara/ Ampati.
10. The Company Secretary, MeECL,Shillong.
11. All Chief Engineers, MePDCL/MePGCL/MePTCL.
12. The Director, HRDC, MeECL, Umiam, with a request to upload the Advertisement in the theMeECL official website.
13. The Public Relations Officer, MeECL, Shillong.
14. All Officers, Corporate Affairs, Shillong.

Sd/-
(D. Warjri)
Deputy Secretary

**INSTRUCTIONS AND PROCEDURE FOR FILLING UP AND SUBMISSION OF
APPLICATION FOR THE POST OF ASSISTANT ENGINEER (ELECTRONICS) AND
JUNIOR ENGINEER(ELECT./MECH/CIVIL) IN MeECL.**

APPLICANTS ARE ADVISED TO READ THE INSTRUCTION CAREFULLY

Applications are invited from Indian Citizens for filling up the temporary posts of Assistant Engineers (Electronics Engineering) and Junior Engineer (Civil/Electrical/Mechanical Engineering) in MeECL. These posts are liable to be terminated, at any time, without assigning any reasons thereof.

1. Assistant Engineer (Electronics Engineering):

1.1 Essential Qualification: Candidates should possess a degree in the following discipline from any Indian University/Institute recognised by the Government of Meghalaya or UGC or AICTE, as below:-

For the post of Assistant Engineer (Electronics) –A minimum of bachelor degree in Electronics Engineering OR Electronics & Communications Engineering OR Electronics & Telecommunications Engineering OR Electronics & Instrumentation Engineering.

1.2 Age:

- (i) Candidates should not be less than 21 years of age and not more than 30 years as on 01.01.2015.
- (ii) Upper age limit is relaxable up to 5 (five) years in case of ST/SC candidates.
- (iii) Upper age limit is further relaxable up to 2 (two) years for post graduate candidates.
- (iv) Upper age limit is further relaxable by 5 (five) years for candidates already working in MeECL as Junior Engineers.

1.3 Scale of Pay: Rs.18,880–470(4)-20,760–560(9)-25,800–760(15)-37,200/-plus usual allowances as admissible under Corporations’ rules.

2. Junior Engineer:

2.1 Essential Qualification: Candidates should possess a 3 (three) year diploma in the respective discipline from any Indian University/Institute recognised by the Government of Meghalaya or UGC or AICTE, as below:-

- (i) For the post of Junior Engineer (Civil) – A minimum of a diploma in Civil Engineering.
- (ii) For the post of Junior Engineer (Electrical/Mechanical) – A minimum of a diploma in Electrical Engineering OR Mechanical Engineering OR Electrical & Electronics Engineering.

2.2 Age:

- (i) Candidates should not be less than 18 years of age and not more than 27 years as on 01.01.2015.
- (ii) Upper age limit is relaxable up to 5 (five) years in case of ST/SC candidates.

2.3 Scale of Pay:Rs. 15,500-350(4)-16,900-460(9)-21,040-620(15)-30,340/- plus usual allowances as admissible under Board’s rules.

3. Instruction for filling up the application form.

- (i) Application Form shall be available in the MeECL website at www.meecl.nic.in
- (ii) The candidate shall print the filled-in Application Form and Admit Card and submit the same as detailed at **Serial 4** below.

4. **Instruction for submission up the application form.**

The following documents are to be submitted to the office of the Director Corporate Affairs, MeECL, LumJingshai, Short Round Road, Shillong – 793001, **on working days between 11:00 am to 4:00 pm from 21stOctober, 2015 to 6th November, 2015. Documents received after the date and time mentioned above shall be summarily rejected.**

- (i) Printed Application Form and Admit Card duly filled in as instructed in **Serial 3** above. Incomplete Application Form OR Application Form submitted in any other format shall be summarily rejected.
- (ii) A Bank Draft of Rs. 460/- for General Candidates and Rs. 230/- for ST/SC candidates, payable at Shillong, in favour of the Principal Account, MeECL, Shillong.
- (iii) 3 (three) recent passport size colour photographs.
- (iv) Self-attested copy of the following :-
 - (a) Birth Certificate.
 - (b) Educational qualification Certificates and Mark Sheets from Matriculation onwards.
 - (c) ST/SC Certificates.

5. **ALL APPLICATIONS SHALL BE SCREENED FOR ELIGIBILITY VIS-À-VIS POST APPLIED FOR. THEREFORE, CANDIDATES MUST BRING THE ORIGINAL DOCUMENTS FOR VERIFICATION.**

CANDIDATES, WHOSE APPLICATIONS ARE ACCEPTED, SHALL BE ISSUED ADMIT CARD ON THE SPOT. HENCE, APPLICANTS ARE REQUIRED TO SUBMIT THE APPLICATIONS IN PERSON.

APPLICATIONS RECEIVED BY POST SHALL BE SUMMARILY REJECTED AND THE BANK DRAFTS SHALL BE FORFEITED.

6. Candidates found (a) submitting false/incorrect certificates/information or (b) not having studied the subjects mentioned in the syllabus or (c) submitting educational qualification certificates not commensurate with the post applied for, shall not be allowed to appear in the written test /personal interview. If such instances go undetected during the screening process but are detected subsequently, such candidates shall be disqualified with retrospective effect.
7. Candidates will be required to appear for a Written Test, which will be held on the **28thNovember 2015 at St. Anthony’s Higher Secondary School, Shillong.**
8. Details of written examination.
- (i) The syllabus for the written test is as indicated in **ANNEXURE I.**
 - (ii) The Total marks and Pass marks for the Technical paper, General studies and Personal interview shall be as below :-

Sl. No.	Post	Subject	Full Marks	Pass Marks
1	Assistant Engineer (Electronics)	Technical Paper	180	90
		General Studies	60	30
		Personal Interview	60	30
2	Junior Engineer (Elect/Mech/Civil)	Technical Paper	180	90
		General Studies	60	30
		Personal Interview	60	30

- (iii) The duration of the written test shall be 3 (three) hours.
- (iv) The examination shall be conducted using the optical marking recognition (OMR) system.

(v) All electronic gadgets, e.g., cellular/mobile phones, calculator, laptop, MP3 players, smart watches, etc, are not allowed inside the examination hall. ***ANY CANDIDATE FOUND IN POSSESSION OF THESE GADGETS INSIDE THE EXAMINATION HALL, SHALL BE DISQUALIFIED, INCLUDING DEBARMENT FROM FUTURE EXAMINATION/RECRUITMENT IN MEECL.***

9. Only those candidates who **qualify** in the written test shall be called for a personal interview on the date to be notified later.
10. Reservation Policy of the Government of Meghalaya will apply.
11. Canvassing directly or indirectly or in any form will disqualify the candidate automatically.
12. No TA/DA will be admissible to candidates for appearing in the written test or personal Interview.
13. The MeECL reserves the right to reject the applications of any or of all the candidates without assigning any reason thereof.
14. The MeECL reserves the right to cancel the Advertisement without assigning any reason thereof

(D. Warjri)
Deputy Secretary

SYLLABUS FOR THE RECRUITMENT TEST TO THE POST OF ASSISTANT ENGINEERS (ELECTRONICS)

Total	- 300 Marks	Duration - 3 Hours
General Studies	- 60 Marks	
Technical Paper	- 180 Marks	
Personal Interview	- 60 Marks	

General Studies: - (60 Marks) - General English, General Knowledge, Aptitude.

Technical Papers. (180 Marks)

1. MATERIAL SCIENCE, COMPONENTS & DEVICES

Crystal Structure, Bond Theory, Behavior of Di-electrics in Static and Alternating Electric Fields Piezo-Electricity, Magnetic properties of materials, Ferro & Ferri Magnetism, conductivity of Metals, Super-conductivity, passive components – Types & properties, Active Components – Types & Properties, Solid State Devices-Physics Characteristics & Models.

2. ELECTROMAGNETIC THEORY

Vector Analysis, Electrostatics, Magnetostatics using vector Methods, Field in Di-Electric in Conductors & in magnetic materials, Time Varying fields, Laplace & Poisson's equation, Maxwell Equation, Plane wave propagation in conducting and Di-electric media, Transmission Line Theory, Antenna theory, propagation of Electro-magnetic wave in Bounded & unbounded media.

3. MEASUREMENTS & INSTRUMENTATION

(Electrical & Electronics measurement) Basic Methods of Measurements Primary & Secondary standards, Error Analysis: Deflecting, Controlling & damping Torques, Indicating Instruments, PMMC instruments, M.I Instrument, Electrodynamometer type Instruments, Measurement of V, I, P, R, L, T and Flux, Bridge Measurements, VTVM, CRO, Q-Meter, Electronic Measurement, Digital Measurements, Tele metering, Data Recording & Display system, Primary & Secondary Cells, Transducers & measurement of Non-electrical quantities.

4. NETWORK THEORY (ELECTRICAL CIRCUITS)

Network Theorems, Steady state & Transient response of Electrical Networks, Frequency Domains Analysis, Two port Network Analysis, Signal Flow graph, Elementary Network Synthesis.

5. CONTROL SYSTEMS

Feedback Theory, Control System Components, Open Loop & closed Loop systems, Response Analysis, Root Locus Technique Stability, Compensation & Design Technique, State Variable Approach.

6. DIGITAL CIRCUITS & ELEMENTS OF COMPUTATION

Binary Arithmetic, Boolean Algebra, Logic Circuits & Gates, Computing circuits, Combinational & sequential Circuits, Digital ICs, Magnetic Devices & Memories, Digital Computer fundamentals, Microprocessors & Microcomputers, Computer programming concepts, Algorithm, Flow Charting Principles, Computer languages, Types Statements, Array Storage, Arithmetic Expression, Logic Expression, Assignment statement, Programming structure.

7. LINEAR NON-LINEAR CIRCUITS

R.C circuits, High Pass, Low pass, Band pass Circuits, RL & RLC circuits, Pulse Shaping circuits, Clipper, Clamper & Comparator circuits, Basic logic gates, Half wave & Full wave rectifier,

Power Supplies, Bistable, Monostable&AstableMultivibrators, Flip Flops, Operational Amplifiers & Op-Amp circuits, Sweep circuits.

8. ELECTRONIC CIRCUIT

Transistor biasing, Diode circuits & thermal stabilization, Low frequency Amplifiers, FET Amplifiers, Large Signal Amplifier, Feedback Amplifiers, Turned Amplifier, Stability & Oscillators.

9. COMMUNICATION SYSTEMS

Basic Information Theory, Signal Analysis, Transmission of Signals, Modulation & detection process, Amplitude Frequency, Phase & Modulated Signal, Comparison of Modulation systems, Noise problems, Channel efficiency, sampling theorem, Sound & Vision broadcast transmitting & receiving systems, Antennas, Transmission Line at Audio, Radio & Ultra High Frequencies, Radio & Line Communication, Television & RADAR, Navigational Aids, Satellite Communication principles, performance of communication systems.

10. MICROWAVE ENGINEERING

Microwave sources, Microwave components & Networks, Measurements of Microwave frequencies, Microwave communication equipment.

11. ELECTRICAL MACHINES

Principles of Electro-mechanical Energy conversion, D.C Generators & Motors, Transformers, Synchronous Induction Motors, Fractional Horse Power Motors, Alternators, Magnetic Circuits & selection of Motors for Drives, Special Electrical Machines.

12. ELECTRICAL POWER SYSTEMS

Power Generation, Thermal Hydro & Nuclear, Power System protection, Economic operation, Load Frequency control, stability analysis.

**SYLLABUS FOR THE RECRUITMENT TEST TO THE POST OF
JUNIOR ENGINEERS (CIVIL)**

Total	- 300 Marks
General Studies	- 60 Marks
Technical Paper	- 180 Marks
Personal Interview	- 60 Marks

Duration - 3 Hours

General Studies: (60 Marks) - General English, General Knowledge, Aptitude.

Technical Papers: (180 Marks)

1. CIVIL ENGINEERING DRAWING

Building Drawing and Services, Structural drawing.

2. SURVEYING

Levelling, Theodolite Surveying, Contouring, Trigonometrical Levelling, Levelling, Tacheometric Surveying, Curves, Gps Surveying, Remote Sensing And Gis.

3. CONSTRUCTION MATERIALS

Stones, Bricks, Aggregates, Mortar, Cement, Timber, Paints, Concrete, Glass, Admixtures

4. HYDRAULICS

Properties Of Fluids, Fluids Statics, Hydrostatic Force On Surfaces, Flow Of Water, Orifices, Mouthpieces, Notices And Weirs, Flow Through Pipes, Open Channel Flow.

5. STRENGTH OF MATERIALS

Simple Stress and Strain, Shear Force and Bending Moment, Geometrical Properties of Area, Structural Steel Connection, Frames.

6. STRUCTURAL DESIGN

Concrete, Design Of Beams, Slabs, Columns, Footings, Staircase, Riveted Connections, Tension Members, Compression Members.

7. BUILDING CONSTRUCTION & SERVICES

Foundations, Architectural Design or Planning, Acoustic and Sound Insulation, Surface Finishing and Construction Machinery, Building Drainage.

8. TRANSPORTATION ENGINEERING

Geometric Design Of Highways, Traffic Engineering, Highway Materials And Construction.

9. THEORY OF STRUCTURES

Stresses And Strains, Slope And Deflection, Propped Beams, Fixed Beam, Torsion, Continuous Beam, Combined Direct And Bending Stress, Portal Frames, Three-Hinged Arch, and Influences Lines.

10. IRRIGATION ENGINEERING

Hydrology, Head Works, River Training Works, Cross Drainage Works, Dams, Canal Masonry Works.

11. SOIL MECHANICS

Weight Volume Relationship, Soil Classification and Identification, Flow of Water through Soils, Stresses in Soils, Earth Pressure, Compaction and Consolidation, Shear Strength, Bearing Capacity.

12. QUANTITY SURVEY & VALUATION:

Detailed estimates, Measurement, Analysis of Rates, Schedule of rates, Abstract of cost, Valuations.

13. CONSTRUCTION MANAGEMENT

Construction Planning, Construction Scheduling, Project Management.

14. EARTHQUAKE ENGINEERING

Basic definitions, General principles in construction of earthquake resistant buildings.

15. ENVIRONMENTAL ENGINEERING

Basic Definitions of Environmental Science, Basic concepts of Environmental Impact Assessment (EIA), Wastewater clarification, Wastewater treatment, Sludge treatment and disposal, Wastewater Collection Systems, Classification of Air Pollution, Air pollution control, Solid Waste: Classification, Sources and Characteristics, Collection, Processing and Disposal Methods.

**SYLLABUS FOR THE RECRUITMENT TEST TO THE POST OF
JUNIOR ENGINEERS (ELECTRICAL/MECHANICAL)**

Total	- 300 Marks
General Studies	- 60 Marks
Technical Paper	- 180 Marks
Personal Interview	- 60 Marks

Duration - 3 Hours

General Studies:(60 Marks) - General English, General Knowledge, Aptitude.

Technical Papers: (180 Marks)

Part A Common for Electrical and Mechanical Engineers – 60 Marks

1. Basic Electricity
2. D.C. Circuits
3. Batteries
4. Electro- Magnetism
5. Capacitors
6. D.C. Generators
7. D.C. Generator Characteristics
8. D.C. Motors
9. A.C. Fundamentals
10. Single Phase A.C. Circuits
11. Balanced Three Phase Circuits
12. D.C. Transients
13. Electrical Engineering Materials
14. Elements of Mechanical Engineering

PART B :For Electrical Engineers only - 120 Marks

1. ELECTRICAL ENGINEERING

Basic concepts. Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units.

Circuit law : Kirchhoff's law, Simple Circuit solution using network theorems.

Magnetic Circuit : Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configuration e.g. straight, circular, solenoidal, etc. Electromagnetic induction, self and mutual induction.

AC Fundamentals : Instantaneous, peak, R.M.S. and average values of alternating waves, Representation of sinusoidal wave form, simple series and parallel AC Circuits consisting of R.L. and C, Resonance, Tank Circuit. Poly Phase system - star and delta connection, 3 phase power, DC and sinusoidal response of R-L and R-C circuit.

Measurement and measuring instruments : Measurement of power (1 phase and 3 phase, both active and re-active) and energy, 2 wattmeter method of 3 phase power measurement. Measurement of frequency and phase angle. Ammeter and voltmeter (both moving coil and moving iron type), extension of range wattmeter, Multimeters, Megger, Energy meter AC Bridges. Use of CRO, Signal Generator, CT, PT and their uses. Earth Fault detection.

2. ELECTRICAL MACHINES :

DC Machines - Construction, Basic Principles of DC motors and generators, their characteristics, speed control and starting of DC Motors, Method of braking motor, Losses and efficiency of D.C. Machines.

1 phase and 3 phase transformers - Construction, Principles of operation, equivalent circuit, voltage regulation, O.C. and S.C. Tests, Losses and efficiency, Effect of voltage, frequency and wave form on losses, Parallel operation of 1 phase & 3 phase transformers, Auto-transformers.

3 phase induction motors - rotating magnetic field, principle of operation, equivalent circuit,

torque-speed characteristics, starting and speed control of 3 phase induction motors, Methods of braking, effect of voltage and frequency variation on torque speed characteristics.

Fractional Kilowatt Motors and Single Phase Induction Motors : Characteristics and applications.

Synchronous Machines - Generation of 3-phase e.m.f. armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, control of active and reactive power, Starting and applications of synchronous motors.

3. GENERATION, TRANSMISSION AND DISTRIBUTION

Power Stations - Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, inter-connection of power stations, power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical faults.

Switchgears - rating of circuit breakers, Principles of arc extinction by oil and air, H.R.C. Fuses, Protection against earth leakage / over current, etc. Buchholtz relay, Merz-Price system of protection of generators & transformers, protection of feeders and busbars, Lightning arresters, various transmission and distribution system, comparison of conductor materials, efficiency of different system.

Cable - Different type of cables, cable rating and de-rating factor.

4. ESTIMATION AND COSTING

Estimation of lighting scheme, electric installation of machines and relevant IE rules, earthing practices and IE Rules.

5. UTILIZATION OF ELECTRICAL ENERGY :

Illumination, Electric heating, Electric welding, Electroplating, Electric drives and motors.

6. BASIC ELECTRONICS :

Working of various electronic devices e.g. P N Junction diodes, Transistors (NPN and PNP type), BJT and JFET. Simple circuits using these devices.

7. FUNDAMENTAL OF COMPUTER AND APPLICATION :

Basic concept, bus architecture, operating system, Basic computer system, memory organization, input/output device, storage device. MS application

PART C :For Mechanical Engineers only - 120 Marks.

1. THEORY OF MACHINES:

Momentum, Energy and Impulse: Simple Mechanism; Friction; Belt, Rope and Chain Drive; Gears; Governors; Cams.

2. PRODUCTION ENGINEERING:

Basic Machining Process; Types of Machine Tools; Extrusion; Welding; Drilling; Shaping; Boring; Reaming; Milling; Grinding; Finishing Processes; Patternmaking and Foundry.

3. INDUSTRIAL ENGINEERING:

Material Handling; Plant Layout; Inventory Control: Store Keeping.

4. FLUID MECHANICS:

Units and Dimensions; Fluid Properties; Buoyancy; Types of Flow; Bernoulli's Theorem; Orifices; Flow in Pipes; Streamlines; Viscous Flow; Flow around Immersed Bodies.

5. TURBOMACHINERY:

Gas turbines, Compressors, Hydraulic turbines, Pumps.

6. THERMODYNAMICS:

Properties of Gases; Properties of Steam; Power Cycles; Steam Boilers; Steam Engines; Condenser; Fuels; Combustion of Fuels.

7. I.C. ENGINES:

C.I. and S.I. Engines; Detonation; Properties of Fuels; Carburetors; Performance of Engines.

8. HEAT TRANSFER:

Modes of Heat Transfer; Fourier's Law; Heat Exchanger.

9. MECHANICAL MEASUREMENTS:

Measurement of Displacement; Velocity; Acceleration; Force; Torque; Strain; Speed; Temperature; Pressure Flow; Shock; Vibration and Sound.