

Date: 8th January 2025

NAME OF THE POST: Assistant Professor (Grade –II) Level-10) [On Contract]

Department Name: Electrical Engineering

Schedule for Reporting, written Test/Verification/Seminar/Interview

	Assistant Professor (Grade II) (level-10)	
Reporting	5 th February 2025 at 8.30 AM	<ul style="list-style-type: none">• Reporting at the Venue.• Submission of one set of signed application, Self-attested certificates and other essential documents.
Written Test	5 th February 2025 (9.00AM to 11.00 AM)	<ul style="list-style-type: none">• Written Test (only MCQs) based on the GATE syllabus.
Verification	5 th February 2025 12:30 PM onwards	<ul style="list-style-type: none">• Verification of documents for only candidates shortlisted based on the written test performance.
Seminar	5 th February 2025 from 2:00 PM onwards	<ul style="list-style-type: none">• Seminar presentation for only the shortlisted candidates based on the written test performance.
Interview	6 th February 2025 from 2.00 PM onwards	<ul style="list-style-type: none">• Interview only for candidates shortlisted based on Seminar performance.

Venue for Written Test/Seminar/Interview:

Written Test Venue: Manipur Public Service Commission, North AOC, Imphal West
Seminar/Interview : HOTEL IMPHAL, North AOC, Imphal West, Manipur

Provisionally shortlisted candidates

S.No	Application Number
1.	R222410EE001
2.	R222410EE003
3.	R222410EE004
4.	R222410EE005
5.	R222410EE006

6.	R222410EE007
7.	R222410EE008
8.	R222410EE009
9.	R222410EE010
10.	R222410EE011
11.	R222410EE012
12.	R222410EE013

13.	R222410EE014
14.	R222410EE015
15.	R222410EE016
16.	R222410EE017
17.	R222410EE018
18.	R222410EE019
19.	R222410EE020

20.	R222410EE021
21.	R222410EE022
22.	R222410EE023
23.	R222410EE024
24.	R222410EE025
25.	R222410EE026
26.	R222410EE027
27.	R222410EE028
28.	R222410EE030
29.	R222410EE031
30.	R222410EE032
31.	R222410EE033
32.	R222410EE034
33.	R222410EE035
34.	R222410EE036
35.	R222410EE038
36.	R222410EE039
37.	R222410EE040
38.	R222410EE041
39.	R222410EE042
40.	R222410EE044
41.	R222410EE045

42.	R222410EE046
43.	R222410EE047
44.	R222410EE048
45.	R222410EE049
46.	R222410EE050
47.	R222410EE051
48.	R222410EE053
49.	R222410EE054
50.	R222410EE055
51.	R222410EE056
52.	R222410EE057
53.	R222410EE058
54.	R222410EE059
55.	R222410EE060
56.	R222410EE061
57.	R222410EE062
58.	R222410EE064
59.	R222410EE065
60.	R222410EE066
61.	R222410EE068
62.	R222410EE069
63.	R222410EE070

64.	R222410EE072
65.	R222410EE073
66.	R222410EE074
67.	R222410EE076
68.	R222410EE077
69.	R222410EE078
70.	R222410EE079
71.	R222410EE080
72.	R222410EE082
73.	R222410EE083
74.	R222410EE085
75.	R222410EE086
76.	R222410EE087
77.	R222410EE088
78.	R222410EE089
79.	R222410EE090
80.	R222410EE091
81.	R222410EE092
82.	R222410EE093
83.	R222410EE094
84.	R222410EE095
85.	R222410EE096

INELIGIBLE CANDIDATES

S. No.	Application No.	Reason for not Shortlisting
1.	R222410EE002	B.E 2nd Class
2.	R222410EE029	No PhD degree awarded
3.	R222410EE037	U.G. and P.G. not in relevant Branch

4.	R222410EE043	U.G. and P.G. not in relevant Branch
5.	R222410EE052	No PhD degree awarded
6.	R222410EE063	U.G. and P.G. not in relevant Branch
7.	R222410EE067	U.G. and P.G. not in relevant Branch
8.	R222410EE071	U.G. and P.G. not in relevant Branch
9.	R222410EE075	U.G. and P.G. not in relevant Branch
10.	R222410EE081	U.G. and P.G. not in relevant Branch
11.	R222410EE084	U.G. and P.G. not in relevant Branch

Note:

- 1) Any grievance/objection w.r.t the non-eligible candidates only are to be sent through e-mail: recruit_faculty@nitmanipur.ac.in on or before January 11, 2025.
- 2) The grievance/objection sent to the above mentioned email-id within the stipulated date will **ONLY** be considered.
- 3) Correspondence sent to any other email Id of the institute will not be entertained.
- 4) Syllabus for written Test for **Assistant Professor (Grade –II) Level-10) [On Contract]** is enclosed in **Annexure I**.

Annexure I: Syllabus for Written Test:

EE	Electrical Engineering
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Section 1: Engineering Mathematics

Linear Algebra: Matrix Algebra, Systems of linear equations, Eigen values, Eigen vectors.

Calculus: Mean value theorems, Theorems of integral calculus, Evaluation of definite and improper integrals, Partial Derivatives, Maxima and minima, Multiple integrals, Fourier series, Vector identities, Directional derivatives, Line integral, Surface integral, Volume integral, Stokes's theorem, Gauss's theorem, Divergence theorem, Green's theorem.

Differential Equations: First order equations (linear and nonlinear), Higher order linear differential equations with constant coefficients, Method of variation of parameters, Cauchy's equation, Euler's equation, Initial and boundary value problems, Partial Differential Equations, Method of separation of variables.

Complex Variables: Analytic functions, Cauchy's integral theorem, Cauchy's integral formula, Taylor series, Laurent series, Residue theorem, Solution integrals.

Probability and Statistics: Sampling theorems, Conditional probability, Mean, Median, Mode, Standard Deviation, Random variables, Discrete and Continuous distributions, Poisson distribution, Normal distribution, Binomial distribution, Correlation analysis, Regression analysis.

Section 2: Electric circuits

Network Elements: Ideal voltage and current sources, dependent sources, R, L, C, M elements; Network solution methods: KCL, KVL, Node and Mesh analysis; Network Theorems: Thevenin's, Norton's, Superposition and Maximum Power Transfer theorem; Transient response of DC and AC networks, sinusoidal steady-state analysis, resonance, two port networks, balanced three phase circuits, star-delta transformation, complex power and power factor in AC circuits.

Section 3: Electromagnetic Fields

Coulomb's Law, Electric Field Intensity, Electric Flux Density, Gauss's Law, Divergence, Electric field and potential due to point, line, plane and spherical charge distributions, Effect of dielectric medium, Capacitance of simple configurations, Biot-Savart's law, Ampere's law, Curl, Faraday's law, Lorentz force, Inductance, Magnetomotive force, Reluctance, Magnetic circuits, Self and Mutual inductance of simple configurations.

Section 4: Signals and Systems

Representation of continuous and discrete time signals, shifting and scaling properties, linear time invariant and causal systems, Fourier series representation of continuous and discrete time periodic signals, sampling theorem, Applications of Fourier Transform for continuous and discrete time signals, Laplace Transform and Z transform. R.M.S. value, average value calculation for any general periodic waveform.

Section 5: Electrical Machines

Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency; Three-phase transformers: connections, vector groups, parallel operation; Auto-transformer, Electromechanical energy conversion principles; DC machines: separately excited, series and shunt, motoring and generating mode of operation and their characteristics, speed control of dc motors; Three-phase induction machines: principle of operation, types, performance, torque-speed characteristics, no-load and blocked-rotor tests, equivalent circuit, starting and speed control; Operating principle of single-phase induction motors; Synchronous machines: cylindrical and salient pole machines, performance and characteristics, regulation and parallel operation of generators, starting of synchronous motors; Types of losses and efficiency calculations of electric machines.

Section 6: Power Systems

Basic concepts of electrical power generation, AC and DC transmission concepts, Models and performance of transmission lines and cables, Economic Load Dispatch (with and without considering transmission losses), Series and shunt compensation, Electric field distribution and insulators, Distribution systems, Per-unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical components, Symmetrical and unsymmetrical fault analysis, Principles of over-current, differential, directional and distance protection; Circuit breakers, System stability concepts, Equal area criterion.

Section 7: Control Systems

Mathematical modelling and representation of systems, Feedback principle, transfer function, Block diagrams and Signal flow graphs, Transient and Steady-state analysis of linear time invariant systems, Stability analysis using Routh-Hurwitz and Nyquist criteria, Bode plots, Root loci, Lag, Lead and Lead-Lag compensators; P, PI and PID controllers; State space model, Solution of state equations of LTI systems.

Section 8: Electrical and Electronic Measurements

Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers, Digital voltmeters and multi-meters, Phase, Time and Frequency measurement; Oscilloscopes, Error analysis.

Section 9: Analog and Digital Electronics

Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: biasing, equivalent circuit and frequency response; oscillators and feedback amplifiers; operational amplifiers: characteristics and applications; single stage active filters, Active Filters: Sallen Key, Butterworth, VCOs and timers,

combinatorial and sequential logic circuits, multiplexers, demultiplexers, Schmitt triggers, sample and hold circuits, A/D and D/A converters.

Section 10: Power Electronics

Static V-I characteristics and firing/gating circuits for Thyristor, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost Converters; Single and three-phase configuration of uncontrolled rectifiers; Voltage and Current commutated Thyristor based converters; Bidirectional ac to dc voltage source converters; Magnitude and Phase of line current harmonics for uncontrolled and thyristor based converters; Power factor and Distortion Factor of AC to DC converters; Single-phase and three-phase voltage and current source inverters, sinusoidal pulse width modulation.

Recruitment Section