

**GOVERNMENT OF INDIA
NORTH EASTERN COUNCIL SECRETARIAT
MINISTRY OF DEVELOPMENT OF NORTH EASTERN REGION
NONGRIM HILLS :: SHILLONG – 793 003.**

Sub: Written Test for engagement as Consultant (Civil Engineering) on contract basis in the NEC Secretariat, Shillong.

With reference to this office Advertisement File No.ADMN-41019/3/2021-ADMN dated 18th January, 2023, it is to inform that written test for Consultant (Civil Engineering) will be held on 17th June, 2023 from 10.00 AM to 12.00 Noon at NIT Meghalaya, Bijni Complex, Laitumkhrach, Shillong-793003.

The details of the eligible candidates along with Roll Numbers (Annexure-I), the Syllabus, Exam Pattern and instructions to the candidates for the examination (Annexure-II) and the blank Admit Card (Annexure-III) are attached herewith.

All the candidates are requested to bring the Admit Card duly filled up the details therein at the time of examination failing which the candidate will not be allowed to enter the examination hall. No TA/DA will be paid for the purpose of appearing the exam.

Enclo: As stated

(L. S. Gangte)
Director (Admn.)



U.O. No. ADMN-41019/3/2021-ADMN

Dated: 12th June, 2023


To,

Sr. Technical Director, NIC, NEC for necessary action for uploading in NEC website.

List of eligible candidates for written test examination to be held on 17th June, 2023 at NIT Meghalaya from 10.00A.M to 12.00 Noon in the field of Consultant (Civil Engineering) on contractual basis in NEC










Sl. No.	Name of candidate with Date of Birth	Photo of the Candidate	Roll No.
1	2	3	4
1	Mr Michael Shane Thongni DOB: 12-05-1992		1
2	Mr Daeimi Phadong DOB: 13-02-1992		2
3	Mr Roderick Lamare DOB: 08-08-1996		3
4	Mr Melampynshai Nongrum DOB: 25-07-1996		4
5	Mr Abhishek Bhandari. DOB: 26-07-1990		5
6	Mr Abhijeet Singha DOB: 29-08-1996		6
7	Mr Stevenly Lyngdoh Tron DOB: 19-11-1994		7

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Sl. No.	Name of candidate with Date of Birth	Photo of the Candidate	Roll No.
8	Mr Regulus Dominic K. Shallam DOB: 05-06-1990		8
9	Miss Keyiraisile Endi DOB: 06-01-1996		9
10	Miss. Amerioca Thangkhiew. DOB: 12-08-1995		10
11	Mr Wanlambok I. Mawnai DOB: 28-03-1997		11
12	Mr. Amarjit Changkakoti DOB: 20-07-1994		12
13	Mr Denice K. Sangma DOB: 31-12-1984		13
14	Mr Arkishembha Sohliya DOB: 04-02-1996		14
15	Mr Nikhil. Gautam. DOB: 18-12-1997		15









Sl.	Name of candidate	Photo of the	Roll No.
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I/5246/2023

No.	with Date of Birth	Candidate	
16	Mr Vernon. Kharbhih DOB: 28-10-1997		16
17	Miss. Benny Khyriemujat DOB: 23-02-1996		17
18	Miss. Banteilang Marbaniang. DOB: 29-07-1993		18
19	Mrs. Irene Basaiawmoit. DOB: 15-08-1987		19
20	Mr. Pynshaiborlang Byrsat. DOB: 03-11-1997		20
21	Miss. Olivia Makri. DOB: 03-04-1996		21
22	Mr. Dakerlang Dopri. DOB: 31-12-1996		22
23	Mr. Banraplang Dopri. DOB: 31-12-1996		23
24	Mr. Dashemborlang. Dolloi. DOB: 15-07-1994		24









Sl.	Name of candidate	Photo of the	Roll No.
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I/5246/2023

No.	with Date of Birth	Candidate	
25	Miss. Indasieng Janai Khyriemmujat. DOB: 05-10-1995		25
26	Mr. Macdonal Basan. DOB: 22-08-1997		26
27	Miss. Arwakani Pohty. DOB: 02-07-1996		27
28	Mr. Mrinal Sarma. DOB: 09-05-1995		28
29	Mr. Mark Moyel Suting. DOB: 28-02-1996		29
30	Miss. Wansalan Suchiang. DOB: 24-12-1992		30
31	Miss. Lapyngbianglang Dkhar. DOB: 07-10-1994		31
32	Mr. Michael E Kurkalang. DOB: 19-01-1997		32









Sl.	Name of candidate	Photo of the	Roll No.
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I/5246/2023

No.	with Date of Birth	Candidate	
33	Mr. Meaibor Hiam Roy M.Pdah. DOB: 13-05-1998		33
34	Mr. Elhanan Gideon Blah. DOB: 16-02-1996		34
35	Mr. Sanborlang Shadap. DOB: 25-01-1992		35
36	Miss. Gladish G.Momin DOB: 04-06-1991		36
37	Mr. Gareth Rayner Challam. DOB: 20-09-1995		37
38	Miss. Mebalari Pohty DOB: 29-11-1994		38
39	Miss. Herilyne Nongrang. DOB: 27-02-1990		39
40	Mr. Sikaibha Ryngkhlem. DOB: 10-02-1996		40









Sl. No.	Name of candidate with Date of Birth	Photo of the Candidate	Roll No.
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I/5246/2023

41	Mr. Medarton Nongrum. DOB: 25-11-1997		41
42	Mr. Samkyrkhu Shullai. DOB: 15-05-1997		42
43	Miss Sicily Kharbuki. DOB: 10-07-1997		43
44	Mr. Nirupam Deb. DOB: 12-01-1990		44
45	Mr. Myntoilang Sylliang. DOB: 28-05-1997		45
46	Mr. Hunlinshisha Kurbah. DOB: 09-09-1997		46
47	Miss. Banri Kurbah. DOB: 02-02-1995		47
48	Miss. Victory Malang. DOB: 10-07-1994		48









Sl. No.	Name of candidate with Date of Birth	Photo of the Candidate	Roll No.
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I/5246/2023

49	Mr. Banraplang Marbaniang. DOB: 27-10-1994		49
50	Mr. Augustine Ryngkhlem. DOB: 14-08-1994		50
51	Mr. MD Aharar Alam. DOB: 12-08-1993		51
52	Miss. Aibanecia Marwein. DOB: 03-07-1995		52
53	Mr. Doffeler David Japang. DOB: 18-03-1995		53
54	Miss. Shimdakerlin Fancon. DOB: 13-07-1995		54
55	Miss. Jenny Challeng. DOB: 24-03-1995		55
56	Mr. Bipul Mktan. DOB: 24-12-1997		56

Sl. No.	Name of candidate with Date of Birth	Photo of the Candidate	Roll No.
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I/5246/2023

57	Ms. Acacia Era Mynso. DOB: 31-12-1997		57
58	Ms. Andrina Lutmon Siangshai. DOB: 05-03-1997		58
59	Mr. Kitnamlang Surong. DOB: 27-12-1993		59
60	Mr. Khlainborlang Malngiang. DOB: 20-10-1996		60
61	Mr. Lambok Syiem. DOB: 06-11-1996		61
62	Miss. Bashongdor Lawriniang. DOB: 17-12-1997		62
63	Miss. Risukka Nellie Pyrbot. DOB: 22-01-1995		63
64	Mr. Nayan Moni Dey. DOB: 02-01-1997		64



Sl. No.	Name of candidate with Date of Birth	Photo of the Candidate	Roll No.
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I/5246/2023

65	Miss. Badaihun Kharsohtun. DOB: 04-08-1997		65
66	Mr. Kenny Benson Kupar Rynjah. DOB: 16-01-1994		66
67	Mr. Easterlang Rymbai. DOB: 23-06-1992		67
68	Mr. Winifred.A Passah. DOB: 29-11-1996		68
69	Mr. Deus Vobiscum S. Mannar. DOB: 03-03-1994		69
70	Mr. Mebanphira Marbaniang. DOB: 26-03-1995		70
71	Mr. Khrawbok Savio Marbaniang. DOB: 13-10-1995		71
72	Miss. Lasiewdor Marwein. DOB: 07-06-1993		72



Sl. No.	Name of candidate	Photo of the Candidate	Roll No.
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I/5246/2023

	with Date of Birth		
73	Mr. Tengjan S. Marak. DOB: 25-10-1993		73
74	Miss. Janai June Warbah. DOB: 25-06-1996		74
75	Mr. Mebaki Shylla. DOB: 10-05-1995		75
76	Mr. Avi Sharma. DOB: 21-10-1996		76
77	Mr. Rituraj Debnath. DOB: 07-03-1994		77
78	Mr. Khrawlang Khongsit. DOB: 07-10-1994		78
79	Mr. Arha O. Nongduh. DOB: 21-08-1996		79
80	Mr. Successful Myria. DOB: 03-12-1992		80

Sl. No.	Name of candidate with Date of Birth	Photo of the Candidate	Roll No.
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I/5246/2023

81	Mr. Raynold Marwein. DOB: 03-09-1993		81
82	Miss. Jenet Nonglait. DOB: 11-11-1992		82

**Written exam for the posts of Consultant in the field of Civil Engineering on contractual basis in
NEC Secretariat, Shillong-03**

Venue: National Institute of Technology Meghalaya, Bijn Complex, Laitumkrah, Shillong 793003

Date: 17th June 2023

Reporting Time: 9:15 am

Exam Time: 10 am-12 pm

1. Syllabus

Section 1: Structural Engineering

Engineering Mechanics: System of forces, free-body diagrams, equilibrium equations; Internal forces in structures; Friction and its applications; Kinematics of point mass and rigid body; Centre of mass; Euler's equations of motion; Impulse-momentum; Energy methods; Principles of virtual work.

Solid Mechanics: Bending moment and shear force in statically determinate beams; Simple stress and strain relationships; Theories of failures; Simple bending theory, flexural and shear stresses, shear centre; Uniform torsion, buckling of column, combined and direct bending stresses.

Structural Analysis: Statically determinate and indeterminate structures by force/ energy methods; Method of superposition; Analysis of trusses, arches, beams, cables and frames; Displacement methods: Slope deflection and moment distribution methods; Influence lines; Stiffness and flexibility methods of structural analysis.

Construction Materials and Management: Construction Materials: Structural steel - composition, material properties and behaviour; Concrete - constituents, mix design, short-term and long-term properties; Bricks and mortar; Timber; Bitumen. Construction Management: Types of construction projects; Tendering and construction contracts; Rate analysis and standard specifications; Cost estimation; Project planning and network analysis - PERT and CPM.

Concrete Structures: Working stress, Limit state and Ultimate load design concepts; Design of beams, slabs, columns; Bond and development length; Prestressed concrete; Analysis of beam sections at transfer and service loads.

Steel Structures: Working stress and Limit state design concepts; Design of tension and compression members, beams and beam- columns, column bases; Connections - simple and eccentric, beam-column connections, plate girders and trusses; Plastic analysis of beams and frames.

Section 2: Geotechnical Engineering

Soil Mechanics: Origin of soils, soil structure and fabric; Three-phase system and phase relationships, index properties; Unified and Indian standard soil classification system; Permeability - one dimensional flow, Darcy's law; Seepage through soils - two-dimensional flow, flow nets, uplift pressure, piping; Principle of effective stress, capillarity, seepage force and quicksand condition; Compaction in laboratory and field conditions; One-

dimensional consolidation, time rate of consolidation; Mohr's circle, stress paths, effective and total shear strength parameters, characteristics of clays and sand.

Foundation Engineering: Sub-surface investigations - scope, drilling bore holes, sampling, plate load test, standard penetration and cone penetration tests; Earth pressure theories - Rankine and Coulomb; Stability of slopes - finite and infinite slopes, method of slices and Bishop's method; Stress distribution in soils - Boussinesq's and Westergaard's theories, pressure bulbs; Shallow foundations - Terzaghi's and Meyerhoff's bearing capacity theories, effect of water table; Combined footing and raft foundation; Contact pressure; Settlement analysis in sands and clays; Deep foundations - types of piles, dynamic and static formulae, load capacity of piles in sands and clays, pile load test, negative skin friction.

Section 3: Water Resources Engineering

Fluid Mechanics: Properties of fluids, fluid statics; Continuity, momentum, energy and corresponding equations; Potential flow, applications of momentum and energy equations; Laminar and turbulent flow; Flow in pipes, pipe networks; Concept of boundary layer and its growth.

Hydraulics: Forces on immersed bodies; Flow measurement in channels and pipes; Dimensional analysis and hydraulic similitude; Kinematics of flow, velocity triangles; Basics of hydraulic machines, specific speed of pumps and turbines; Channel Hydraulics - Energy-depth relationships, specific energy, critical flow, slope profile, hydraulic jump, uniform flow and gradually varied flow

Hydrology: Hydrologic cycle, precipitation, evaporation, evapo-transpiration, watershed, infiltration, unit hydrographs, hydrograph analysis, flood estimation and routing, reservoir capacity, reservoir and channel routing, surface run-off models, ground water hydrology - steady state well hydraulics and aquifers; Application of Darcy's law.

Irrigation: Duty, delta, estimation of evapo-transpiration; Crop water requirements; Design of lined and unlined canals, head works, gravity dams and spillways; Design of weirs on permeable foundation; Types of irrigation systems, irrigation methods; Water logging and drainage; Canal regulatory works, cross-drainage structures, outlets and escapes.

Section 4: Environmental Engineering

Water and Waste Water: Quality standards, basic unit processes and operations for water treatment. Drinking water standards, water requirements, basic unit operations and unit processes for surface water treatment, distribution of water. Sewage and sewerage treatment, quantity and characteristics of wastewater. Primary, secondary and tertiary treatment of wastewater, effluent discharge standards. Domestic wastewater treatment, quantity and characteristics of domestic wastewater, primary and secondary treatment. Unit operations and unit processes of domestic wastewater, sludge disposal.

Air Pollution: Types of pollutants, their sources and impacts, air pollution meteorology, air pollution control, air quality standards and limits.

Municipal Solid Wastes: Characteristics, generation, collection and transportation of solid wastes, engineered systems for solid waste management (reuse/ recycle, energy recovery, treatment and disposal).

Noise Pollution: Impacts of noise, permissible limits of noise pollution, measurement of noise and control of noise pollution.

Section 5: Transportation Engineering

Transportation Infrastructure: Highway alignment and engineering surveys; Geometric design of highways - cross-sectional elements, sight distances, horizontal and vertical alignments; Geometric design of railway track; Airport runway length, taxiway and exit taxiway design.

Highway Pavements: Highway materials - desirable properties and quality control tests; Design of bituminous paving mixes; Design factors for flexible and rigid pavements; Design of flexible pavement using IRC: 37-2012; Design of rigid pavements using IRC: 58-2011; Distresses in concrete pavements.

Traffic Engineering: Traffic studies on flow, speed, travel time - delay and O-D study, PCU, peak hour factor, parking study, accident study and analysis, statistical analysis of traffic data; Microscopic and macroscopic parameters of traffic flow, fundamental relationships; Control devices, signal design by Webster's method; Types of intersections and channelization; Highway capacity and level of service of rural highways and urban roads.

Section 6: Geomatics Engineering

Principles of surveying; Errors and their adjustment; Maps - scale, coordinate system; Distance and angle measurement - Levelling and trigonometric levelling; Traversing and triangulation survey; Total station; Horizontal and vertical curves.

Photogrammetry - scale, flying height; Remote sensing - basics, platform and sensors, visual image interpretation; Basics of Geographical information system (GIS) and Geographical Positioning system (GPS).

2. Exam Pattern

Question paper pattern: Objective Type Question*

Number of Questions: 50

Total Marks: 100

Duration of Exam: 2 Hrs

*No negative marking

3. Instructions to the Candidates

- a) Examination will be held on the 17th June 2023 from 10:00 AM to 12:00 PM at the National Institute of Technology, Bijini Complex Laitumkrah, Shillong. Reporting Time: 9:15 am.
- b) The candidates need to bring Admit Card/Call Letter issued by NEC along with Government issues valid Identity proof. Candidates need to follow the instructions written on the Admit Card/Call Letter.

- c) Candidates should report to the Examination Hall 15 minutes before the start of the examination and observe silence in the Examination Hall. Any conversation or disturbance in the Examination Hall shall be deemed as misbehavior. If a candidate is found using unfair means, his/her candidature shall be cancelled.
- d) Candidates should not bring books/notes, used test Booklets or any other material any article into the Examination Hall.
- e) Seat indicating Roll Nos will be allotted to candidates and they must occupy their allotted seat.
- f) Possession/Use of Mobiles Phones and other Electronic/Communicable Devices are banned in the examination premises. Candidates are advised in their own interest not to bring any of the banned items to the Examination Centre as arrangement for their safekeeping cannot be assured.
- g) Candidates should carefully read the following instruction on the cover of the test Booklet/ Answer Sheet which will be provided to them in the Examination Hall.
- h) Candidates need to bring BLUE/BLACK BALL POINT PEN and allowed to bring a non-programmable calculator.
- i) Candidates should write clearly in BLUE/BLACK BALL POINT PEN his/her Roll No and Question Paper Set No on the Answer Sheet.
- j) No candidates will be allowed to leave the Examination Hall/ Room until the conclusion of the duration of the Examination.
- k) The Invigilator on duty will make an announcement regarding the close of the Examination, 5 minutes before the closing time and when the final bell rings. All the writing should be stopped accordingly.

Admit Card

ROLL NUMBER		
1.	Name of the Post	: Consultant (Civil Engineering)
2.	Name of the candidate	:
3.	Father's Name	:
4.	Mother's Name	:
5.	Full Address	:
6.	Category	:
7.	State	:
8.	e-mail & Mobile No.	:
9.	Venue of the examination	: NIT Meghalaya, Bijni Complex, Laitumkrah, Shillong-793003.
10.	Date of Examination	: 17 th June, 2023.

Self Attested
Recent
passport
Photograph to
be pasted

Instructions to the Candidates:

1. Candidates are advised to report NIT Meghalaya at 9.15 AM.
2. Admit card and Government issues valid identity proof will be checked at the gate.
3. Seat indicating Roll Nos will be allotted to the candidates and they must occupy their allotted seat.
4. Candidates need to bring BLUE/BLACK BALL POINT PEN and allowed to bring a non programmable calculator.
5. No candidates will be allowed to leave the Examination Hall/ Room until the conclusion of the duration of the Examination.
6. Candidates should observe silence in the Examination Hall. Any conversation or disturbance in the Examination Hall shall be deemed as misbehaviour. If a candidate is found using unfair means, his/her candidature shall be cancelled.
7. Use of mobile phone and written materials are not allowed to carry inside the NIT Meghalaya.
8. The Invigilator on duty will make an announcement regarding the close of the Examination, 5 minutes before the dosing time and when the final bell rings. All the writing should be stopped accordingly.