



भारत संचार निगम लिमिटेड
(भारत सरकार का उद्यम)
कार्मिक शाखा, निगम कार्यालय
चौथा तल, भारत संचार भवन,
जनपथ, नई दिल्ली 110 001

No. BSNLCO-PERS/15(12)/1/2023-PERS1(Civil)

Dated 21.12.2023

To

All Heads of Telecom Circles/Administrative Units,
BSNL.

Subject: **Revision of Scheme and Syllabus of LICE for promotion to the grade of SDE(C) of Civil Stream.**

The undersigned is directed to enclose herewith the revised Scheme and Syllabus of Limited Internal Competitive Examination (LICE) for promotion to the grade of SDE(C) of Civil Stream, for wide publicity among the executives of BSNL.

2. The revised Scheme and Syllabus for LICE quota promotions shall be applicable w.e.f. vacancy year 2023 and all the promotions under LICE quota for vacancy year 2023 and onwards shall be conducted as per revised Scheme and Syllabus.

This issues with the approval of competent authority.

Encl. As above.

(जी.पी. विश्नोई/ G.P. Vishnoi)

उप महाप्रबंधक (कार्मिक-डीपीसी-एसएम)
Dy. General Manager (Pers-DPC-SM)

Copy to:

1. PPS to CMD, BSNL.
2. PPS to functional Directors of BSNL Board.
3. PPS to CVO, BSNL.
4. All CGMs/PGMs/Sr. GMs/GMs, BSNL CO.
5. All Heads of cadre controlling authorities.
6. General Secretary, SNEA/AIGETOA/SEWA.
7. OL Section for Hindi version.
8. BSNL Intranet portal.

(मूलचंद/ Mool Chand)

सहायक महाप्रबंधक(कार्मिक नीति)
Assistant General Manager (Pers. Policy)

**Scheme and syllabus for the Limited Internal Competitive Examination (LICE)
for promotion to the grade of Sub Divisional Engineer (Civil) of Civil Stream**

1. Scheme of Examination

1.1. The examination will consist of one paper (two sections) as given below:

Paper	Maximum Marks	Duration
(i) Written Test (Core)	120 marks (120 Questions)	3 Hrs.
(ii) Written Test (Common)	60 marks (60 Questions)	
Total	180 marks	

Note:

(a) The examination will be conducted in one shift of 3 hrs. duration.

(b) The examination will be multiple choice objective type with negative marking. For each correct answer 01 mark will be awarded and for each wrong answer (-) 0.25 marks will be awarded.

1.2. Determination of final merit list:

Final merit list shall be published based on marks obtained in the written Examination. Qualifying Marks [Written test (Core) and Written test (Common) put together]: UR-50%; SC/ST-45%, PwBD-45% if sufficient PwBD candidates are not available on prescribed standards.
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2. Syllabus:

2.1 Syllabus for Written Test (Core) – Civil

Sl. No.	Topic	Topic sub-heading	Weightage (in %)
1.	Building Materials	Stone, Lime, Glass, Plastics, Steel, FRP, Ceramics, Aluminum, Fly Ash, Basic Admixtures, Timber, Bricks and Aggregates: Classification, properties and selection criteria; Cement: Types, Composition, Properties, Uses, Specifications and various Tests; Cement Mortars and Concrete: Properties and various Tests; Design of Concrete Mixes: Proportioning of aggregates and methods of mix design.	10
2.	Solid Mechanics	Elastic constants, Stress, plane stress, Strains, plane strain, Mohr's circle of stress and strain, Elastic theories of failure, Principal Stresses, Bending, Shear and Torsion.	3
3.	Structural Analysis	Basics of strength of materials, Types of stresses and strains, Bending moments and shear force, concept of bending and shear stresses; Analysis of determinate and indeterminate structures; Trusses, beams, plane frames; Free and Forced vibrations of single degree and multi degree freedom system.	10
4.	Design Principles	Determination of dead, live, wind and earthquake forces; Factor of safety, load factors & load combinations; Use of relevant BIS codes, Provisions of important BIS codes – IS 456, 800, 875, 1893 & 13920; Ductile design and detailing.	4

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5.	Design of Steel Structures	Principles of Working Stress method & Limit State method, Design of tension and compression members, Design of beams and beam column connections, built-up sections, Girders, Industrial roofs. Principles of Ultimate load design.	6
6.	Design of Concrete and Masonry Structures	Limit state design for bending, shear, axial compression and combined forces; Design of Beams, Columns, Slabs, Lintels, Foundations, Retaining walls, Tanks, Staircases; Earthquake resistant design of structures; Design of Masonry Structure.	10
7.	Construction Practice and Planning	Construction - Planning, Equipment, Site investigation and Management including Estimation as per CPWD practice, Cost Index; General details of building construction including centering & shuttering, earth work, mortars, concrete work, RCC work, foundation, flooring, masonry, water supply, plumbing, steel work, wood work, finishing, sanitary installation, roofing, water proofing works, drainage, road work, aluminium work and structural glazing aluminium composite panel including mode of measurements as per CPWD specifications. Analysis of Rates of various types of works as per CPWD practice; Quality Control and testing of common building materials as per CPWD specifications.	15
8.	Environmental Engineering:		
(a)	Water Supply Engineering	Sources, Estimation, quality standards and testing of water and their treatment; Physical, chemical and biological characteristics and sources of water, Pollutants in water and its effects; Institutional water supply system; Estimation of water demand; Drinking water Standards, Water distribution networks, valves & fittings.	5
(b)	Waste Water Engineering	Planning & design of domestic waste water, sewage collection and disposal; Plumbing Systems. Components and layout of sewerage system; Planning & design of Domestic Waste-water disposal system; Sludge management including treatment, disposal and re-use of treated effluents.	5
9.	Geo-technical Engineering and Foundation Engineering:		
(a)	Geo-technical Engineering	Soil exploration - planning & methods, Properties of soil, classification, various tests and inter-relationships; Permeability, Compressibility, consolidation and Shearing resistance. Earth pressure theories and stress distribution in soil.	4
(b)	Foundation Engineering	Types of foundations & selection criteria, bearing capacity, settlement analysis, design and testing of shallow & deep foundations.	6
10.	Surveying	Classification of surveys, various methodologies, instruments & analysis of measurement of distances, elevation and directions; Survey Layout for road alignment and buildings, Setting out of Curves.	5

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11.	Roads and Pavements	Planning & construction methodology, Alignment and geometric design; Principles of Flexible and Rigid pavements design.	3
12.	Monetization of Land & Buildings	Management of Estate, Monetization of Assets, LDD, Methods of Valuation, Procedure of Valuation, Rent Assessment; BSNL CROP policy.	5
13.	PS, PM, MM and REM Module	Various T-Codes and reports generation	4
14.	Communication Towers:		
(a)	Ground Based Tower	Materials, Specifications, Fabrication, Foundation & erection as per Generic requirements of TEC.	3
(b)	BTS shelter	Materials, Specifications, Fabrication, Foundation & installation as per Generic requirements of TEC.	2

2.2 Syllabus for Written Test (Common):

1	IT Tools	<ul style="list-style-type: none"> • MS office: Word, Excel, Power Point • E-Office • ESS workflows • ERP-SAP processes • Fundamentals of Artificial Intelligence (AI) • Cyber Security from end user perspective
2	Planning & Operation	<ul style="list-style-type: none"> • BSNL Procurement Manual • GeM, CPP, MSTC • Energy Conservation OORJA APP (Project OJAS) • BSNL Land Monetization Policy • BSNL CROP Policy
3	General Admn.	<ul style="list-style-type: none"> • RTI, PGRMS, Grievance Redressal Mechanism • Contract Management • IPMS • BSNL CDA Rules
4	Spectrum & Licensing	<ul style="list-style-type: none"> • Types of Telecom License • Basics of USO Framework • Spectrum allocated to BSNL
5	TRAI regulations	<ul style="list-style-type: none"> • Basics of TRAI QoS
6	Project Management	<ul style="list-style-type: none"> • Project evaluation (Payback / NPV/RoI) • Project Budgeting and RE/BE • Project monitoring (CPM/PERT) • Capitalization, WIP, Depreciation and Scrapping

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Handwritten signature and date: 21.12.2023