



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

Dated 21.12.2023

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

To

All Heads of Telecom Circles/Administrative Units,  
BSNL.

Subject: **Revision of Scheme and Syllabus of LICE for promotion to the grade of SDE(E) of Electrical 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(E) of Electrical 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. विश्णोई/ 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.

(मूल चंद/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(E) of Electrical Stream**

**1. Scheme of Examination**

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

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

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) – Electrical**

<b>Topic Heading</b>	<b>Topic Sub-heading</b>	<b>Weightage (in%)</b>
<b>Acts and rules</b>	Contract act /IE Rules/NBC/ECBC	5
	Labour laws and act, EPF/ESI	
<b>CPWD norms</b>	CPWD specification for electrical (internal/external work)	10
	EW-6/8 and tendering process	
	Plinth Area Rate/DSR/Preliminary and detailed estimate	
	Billing & measurement	
	Basics of Arbitration and conciliation	
<b>Power Electronics</b>	Basic of Semiconductor devices (diodes/thyristor/MOSFET and characteristic)	5
	UPS/SMPS/Calculation of battery size	
<b>Electrical Machines</b>	Basic concept of Electrical Machines (Generator/Motors/Regulation/Power Transformer)	10
	Transformer (Dry/Oil type, working principal/efficiency/Losses and its application) and capacity calculation	
<b>Earthing</b>	Design and type of earthing system (Plate/pipe/grid/piles & TT /IT & TN/Chemical)	10
	Installation and Measurement of earth value	
	Aviation Light selection/Lightning Arrestor standard/ solid state Surge protection System	

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<b>Substation</b>	Space requirement layout and various component of substation (transformer /cabling /HT /LT distribution panel)	10
	Substation capacity calculation	
	Power factor improvement, capacitor and their selection	
	Type of switch gear (ELCB/ RCCB/MCB/MCCB/FSU/SFU/changeover switch) and working principle	
	Protection and safety devices. Testing and calibration	
<b>DG set</b>	DG set selection (space /capacity/water cooled /Air cooled)	5
	Protection and safety devices	
	Operational concept of AMF panel	
	Class of governor and turbo charger	
	CPCB norms	
<b>Lighting</b>	Concept of illumination in telecom building (indoor and outdoor)	5
	Design and type of luminaries	
	Latest trend in efficient lighting	
	Advantage /disadvantage of CFL/LED lighting	
<b>Pumps</b>	Type of pump (centrifugal/submersible/mono block/fire pumps ) and working principle	5
	Designing of pump capacity	
	Maintenance and trouble shooting and safety	
	Starter (DOL/semi/automatic)	
<b>Fire Detection and Fire fighting</b>	Type of fire (A/B/C/D/E), selection of fire extinguisher and NBC guidelines	5
	Fire Alarm & Detection system, concept and design(Conventional/ addressable/VESDA)	
	Detectors and their selection	
	Fire protection method as per NBC (Dry riser/wet riser/sprinkler/ gas flooding system)	
	Fire drill and rescue process	
<b>Lift and Elevator</b>	Lift space requirement and design and RTT calculation	5
	Type of lifts/ARD Features	
<b>Energy Conservation and RET</b>	NCM/LCM/HCM/Energy conservation act/energy audit	10
	Renewable Energy Technology (Solar PV /Wind/Hybrid)	
	Project OJAS/Oorja app	
<b>Instrumentation and Measurement</b>	Electronic measurement instruments, transducer and application (frequency/temperature/pressure/flow rate displacement /noise level /humidity/Power Factor/Energy)	5


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<b>HVAC</b>	Component of HVAC	5
	Selection and design of AC system i/c split/VRV/package/HPAC	
	Free cooling (turbo ventilator/ DC driven /natural cooling)	
	AHU and air quality management i/c ventilation for telecom building	
<b>Operation and Maintenance</b>	Preventive and day to day maintenance checks in respect of all the electrical/ electro-mechanical services in telecom installations, frequency of various tests prescribed by BSNL/DOT and equipment manufacturers.	5

## 2.2 Syllabus for Written Test : Common

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

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